EXPORT EDITION

THE BUILDER

a Journal for the

ARCHITECT & CONSTRUCTOR

No. 5525. 107th Year. FRIDAY, JANUARY 7, 1949 ONE SHILLING

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THE BUILDER

INCORPORATING

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VOL. CLXXVI JANUARY 7, 1949 No. 5525

THIS WEEK'S NEWS

PAGE

THE NAMES of prominent personalities in the building professions and industry appear in the New Year Honours List published on January 1. 3

MR. HOWARD ROBERTSON, F.R.I.B.A., S.A.D.G., Hon. A.I.A. (of the firm of Easton and Robertson), has been nominated by the Council of the R.I.B.A. as recipient of the Royal Gold Medal for 1949. 4

AN ARTICLE on building apprenticeship gives some of the reasons for the shortage of apprentices. and describes the work of the Building Apprenticeship and Training Council and the National Joint Apprenticeship Board. 7

THE MASTER PLAN for Crawley New Town is described and illustrated on page 10

THE COUNCIL OF THE R.I.B.A. has approved the adoption of the scale of fees issued by the R.I.C.S. in respect of professional services in connection with claims for depreciation of land values under Part VI of the Town and Country Planning Act, 1947. 16

THE COUNCIL OF THE N.F.B.T.E. propose to bring to the attention of its members the need for all employers adequately to provide for the superannuation of their regular employees. 18

THE IMPORTANCE OF RESEARCH

THE building industry has often been charged with indifference to scientific research development. Even within the industry itself there may be found those who quote with approval Rudyard Kipling's lines:

> I tell this tale, which is strictly true,
> Just by way of convincing you
> How very little, since things were made,
> Things have altered in the building trade.

These lines were, of course, an exaggeration even when Kipling wrote them, and the last 50 or 60 years have made them even less applicable. But it remains true that, alone among the major industries of this country, the building industry has no organisation of its own for undertaking research and for securing the application of the results of research in technical practice. This reflects little credit on the industry, particularly in view of the fact that, for many years to come, the demand for building is likely to exceed the available resources. There are, of course, excellent committees such as the R.I.B.A. Architectural Science Board and the Research Committee of the Employers' Federation, but these cannot be said, nor would they claim, to be in any way comparable to the research associations which exist to-day in the great majority of industries. There are now 38 of these research associations formed by different industries and run entirely by them, though supported by grants from the Department of Scientific and Industrial Research. The D.S.I.R. thus stands in a dual relationship to most industries. Apart from its own establishments such as the National Physical Laboratory, the Chemical Research Laboratory, the Fuel Research Station, and the Building Research Station, it is also responsible for sponsoring the industrial research associations.

Some account of the results achieved by this two-fold approach to the application of science in industry has been given in a series of articles which recently appeared in the Board of Trade *Journal* and which have now been reprinted in book form.* These articles survey the contribution made by science to the progress of a number of widely differing industries, and abundant proof is given, if proof be needed, of the striking achievements which research is capable of bringing about. It is impossible to review these achievements even in outline here, but a number of general conclusions are worth mentioning.

Perhaps of foremost significance is the fact that scientific research has almost as great a contribution to make to the future of traditional industries as to some of the newer industries which owe their entire existence to scientific discovery. The importance of research in the chemical and electrical industries is obvious enough, but these articles show the great benefits brought by research to traditional industries such as wool, cotton, pottery, boots and shoes. In the sphere of textiles, for instance, the production of unshrinkable fibres is a development of importance to every person in this country. No one would suggest that there are not equally important problems relating to the serviceability of building methods and materials.

It may be asked whether there is any advantage in establishing a central research association maintained by the building industry when the Building Research Station is already in existence. The experience of the D.S.I.R. research movement suggests that there is. It is significant that the D.S.I.R., while maintaining its own research departments, has considered it worth while to encourage the formation of the industrial research associations; and even more significant perhaps is the fact that the various industries concerned have also thought it worth while to establish these bodies and to finance them. This duality may be found throughout a very wide range of industries. Thus the shipbuilding industry has recently formed a research association, although it undoubtedly benefits from the work caried on at the National Physical Laboratory and other establishments of the D.S.I.R. Again, notwithstanding the work of the Fuel Research Station, there are industrial research associations for coal, coke, electricity and gas. These examples could be multiplied, and there is no doubt that the D.S.I.R. would welcome the establishment by the building trades of a research association to supplement the work of the Building Research Station and the Forest Products Research Laboratory. It is clearly in the nature of scientific investigation that the existence of these parallel sets of research institutions should be of mutual assistance to both.

There are also reasons of a somewhat different nature which make it desirable for the building industry to have its own facilities for scientific research. The Building Research Station is administered by a Board of which several distinguished persons in the industry are members. They are, however, chosen as individuals and not as representatives of any particular interests. That is a perfectly proper arrangement which we certainly have no desire to criticise, but it does mean that the various organisations in the building industry have no direct voice in the management of building research. If the industry maintained its own organisation for research then it would have control over some part of the research programme. This would be of particular advantage in this post-war period, when the building programme is necessarily subject to Government control. Thus, when the Government announced its cuts in capital construction just over a year ago in consequence of the economic crisis, the industry was unable to offer any technical proposals

* "Research in Industry." Published by H.M. Stationery Office, price 1s. 6d. A summary appears on page 22.

for overcoming the shortage of steel and timber, or to initiate any investigations which might have helped to improve matters in due course. Moreover, as we have previously suggested in these columns, the present official programme of building research seems to be largely misdirected from the point of view of solving the most pressing problems facing the building industry —namely, the shortage of essential constructional materials such as steel, cement and timber.

It is not sufficient, of course, merely to conduct research; it is equally important that the results of the research should be disseminated as widely as possible. Both branches of the official research movement carry out this task. The D.S.I.R.'s own departments have collected a vast store of knowledge which is available to anyone who asks for it. The information gathered by industrial research associations is naturally the property of those bodies; but as Sir Edward Appleton points out in the first of the articles mentioned, the subscription required for membership is very modest, being, in the case of small firms, much less than the yearly salary of an office boy, yet entitling the firm to participate in results worth many thousands of pounds. This is a fact of particular significance in the building industry where the average firm—whether architects or builders —is comparatively small.

It is time the leaders of the industry put their heads together to consider this matter.

THE ROYAL GOLD MEDALLIST

THE nomination of Mr. Howard Robertson as Royal Gold Medallist, 1949, will be received with genuine pleasure and approval by his professional colleagues at home and abroad. The medal is for "the promotion of architecture" and it has been gained by architects who were writers and by writers who were architects and, on past occasions, some have thought, by men who were neither. No such gloomy thought is provoked by the present nomination; the medal this year goes to a man who, as architect and writer, and teacher and humanist into the bargain, has made a great contribution to the architecture of his time, whose work is known and appreciated not in this country only, but equally in Europe, the Near East and in America.

The story is told of Lord Wavell, when a boy at Winchester, that, when his father made inquiry as to the progress of his son in his preparation for the Army, he was told by the future Field Marshal's housemaster: "I consider that he would achieve success in almost any other walk of life." In his early days as a student at the old A.A. Schools, Mr. Robertson was advised by the late Phêné Spiers, a visiting critic, to give up architecture! This was in 1905. Three years later he passed into the Beaux Arts and finished his career there as a student by winning the medal for the best diploma work of the year. That the subject was for an Anglican church in Gothic deserves not to go unnoticed by those young men and women who to-day hold that the study of past styles is a waste of time; it is sometimes well to know what one is throwing overboard.

Some details of the Royal Gold Medallist's career and works are given elsewhere, but it may be noted that Mr. Robertson's position as a leader of British contemporary architectural thought has been recognised in the many appointments he has held as consultant for Government or international buildings abroad, the latest of which has been the U.N. building on the East River. Those who know his perennially youthful appearance and outlook remember with surprise that he acted as technical adviser to the Secretary-General of the League of Nations for the completion of the League's buildings in Geneva after the 1914-18 war. Notwithstanding a busy practice, he found time to play a part as President of the Building Industries' National Council in welding the industry into a coherent whole, to act for 15 years as Principal and Director of the A.A. Schools—a vintage period, too, it has turned out to be—and to write half-a-dozen standard works on the principles and theory of architecture. It it, perhaps, Mr. Robertson's greatest attribute that he believes in the inevitability of a contemporary architectural expression, but equally in a personal expression of the architectural problem as opposed to the codes of cliques. A selection of some of his personal work given in this issue shows how successfully he has followed that precept. We offer our sincere congratulations to Mr. Robertson on the honour that has been done him, in which our readers will, we believe, wish to be associated.

BUILDING APPRENTICESHIP

LIKE any highly skilled industry, the building trades depend for their continued technical efficiency upon an adequate and constant intake of apprentices of the right quality. It is the more disturbing, therefore, to learn from a speech made last month by the Minister of Works that we are falling considerably short of the 22,000 to 25,000 boys who need to be apprenticed annually to the building trades if our industry is to maintain a flow of qualified craftsmen.

In a special article elsewhere in this issue, the system devised and carried out by the National Joint Apprenticeship Board for the Building Apprenticeship and Training Council to meet current conditions is outlined, and some of the reasons noted that have been advanced in explanation of the unsatisfactory numbers of boys coming forward. In general, a shortage of work of a suitable nature on which to train boys is a principal difficulty, and this has had some influence upon the building employer who has shown reluctance to apprentice a normal quota of boys. In an attempt to surmount this obstacle, the Apprentice Master Scheme was set up in 1943, and to date over 3,000 boys have entered the industry through this scheme, while a similar number are still undergoing training. There is a strong feeling that this scheme, which was devised as a temporary war-time expedient only, should be abandoned in favour of the normal method of individual apprenticeship. One of the most practical steps that could be taken to bring this about would be a substantial and uninterrupted increase in the licensing of those types of work on which apprentices were formerly trained; this would encourage employers to take and train additional boys.

What is doubtful is whether this step of itself would bring in a sufficiency of boys. There are certain factors which, no doubt, the B.A.T.C. is examining. First, there is the general trend observable at the present time when, owing to the shortage of juvenile labour, boys on leaving school ask and receive wages out of all proportion to their worth. As a corollary to this is the particular situation within the building industry itself where a boy labourer of 16 can earn wages very much in excess of the 43s. which the London apprentice of equal age receives. Next, there is a tendency on the part of parents to put their boys into "black coat" jobs and to avoid the so-called "dirty" trades. And there is a lack of knowledge among many parents and their boys as to what opportunities for advancement exist in the building trade, and what security it offers, both now and at the end of a working life. Finally, there is the question whether the period of apprenticeship is not too long. A five-year apprenticeship, followed by National Service, means in effect that a youth is rising 22 before he is qualified to receive a man's money. The B.A.T.C. might well consider whether a shorter apprenticeship period would not produce a bricklayer, for example, fully qualified to carry out the simpler work which is the order of the day. It has to be remembered that the extra year at school, supplemented by compulsory attendance one day a week at a technical school in employers' time, is likely to produce a more intelligent boy.

These are some of the problems which face those who are responsible for the recruitment of apprentices. They are complicated and we have no wish to oversimplify them. Sir George Gater's committee is facing them with resolution, and we hope that, whatever steps they take, they will particularly attack the problem of educating boys and their parents in the glorious opportunities which building offers for doing a worthwhile job and for personal advancement.

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NOTES AND NEWS

New Year Honours.

MR. JOHN HUBERT WORTHINGTON, A.R.A., V-P.R.I.B.A., was created Knight Bachelor in the New Year Honours List published on January 1 in a series of special supplements to the London Gazette. Mr. Alan Arthur Saunders, lately Co-ordinator of Building Supplies, Ministry of Health, also becomes a Knight Bachelor.

Other honours were awarded to prominent personalities in the building professions and industry as follows:—

C.B.—D. L. Macintyre, V.C., Under-Secretary, M.o.W.; A. B. Valentine, Under-Secretary, M.O.T.C.P. C.B.E.—Col. W. C. Devereaux, managing director, Almin, Ltd., chairman, International Alloys, Ltd.; C. C. W. Goodall, Director of Contracts, M.o.W.; E. J. Smith, past-president, National Federation of Building Trades Employers, chairman, Wales Joint Committee, Building Industry; C. D. Spragg, secretary, Royal Institute of British Architects. O.B.E.—D. L. Daunton, Assistant Chief Architect, M.o.W.; W. E. Fishburn, Vice-president, National Federation of Building Trades Employers; H. S. Ganderton, County Surveyor, Wiltshire; E. J. Jordan, Principal Housing Officer, N.W. Region, M.o.H.; E. E. King, Town Clerk, West Ham, for services to town planning; C. G. Spragg, Midland Region Secretary, National Federation of Building Trades Operatives; and F. W. Wright, Assistant Director, M.o.W.

The R.I.B.A. Honoured.

NONE of the honours recorded above will give greater pleasure than those awarded to Mr. Worthington and Mr. Spragg. The knighthood conferred on Mr. Worthington is a signal recognition of a long and distinguished contribution to the art and practice of architecture, in Manchester (where he practises), in Oxford, as an architect for the Imperial War Graves Commission in the Western and Eastern Mediterranean and East Africa, and in London, where his designs for the rebuilt Inner Temple will soon, we may hope, be taking shape. Our congratulations to him will, we know, be endorsed by his colleagues and many friends.

The C.B.E. which is awarded to Mr. Spragg will also give great satisfaction. Though he has been Secretary of the R.I.B.A. only since 1945, he has been on the staff of the R.I.B.A. since 1913, since 1926 as Assistant Secretary. It could have been no simple job to follow Sir Ian MacAlister, that *doyen* of secretaries, but there is no doubt that the Institute stands to-day as high as ever it did in the estimation of its members. That this is so is due in large measure to the Secretary, who has carried the full burden of the Institute's complex administration and adds to a genius for work a detailed grasp of the profession and its needs possessed by no one else. Mr. Spragg's genial and unruffled nature has done much to endear him to his members and to others beside who will rejoice over an honour which, while bringing further honour to the Institute, is also personal to him.

Staff for Festival of Britain.

THE Festival of Britain 1951 authorities announce that vacancies now exist in London for architects, architectural assistants, and building surveyors and assistant surveyors, at salaries ranging from £675 to £1,200 per annum, according to qualifications and experience. There is also a vacancy for a deputy head of the design section. Candidates for the latter post, it is stated, should have had considerable experience of organising and maintaining studio service and of buying art work and allied material for exhibition and display purposes. They must also have a lively interest in contemporary design. Applications, quoting J.486/48, should be made to the Technical and Scientific Register (K), York House, Kingsway, London, W.C.2.

R.I.B.A. Awards.

ON January 11 the announcement of the award of prizes and studentships will be made at the R.I.B.A., 66, Portland-place, W.1, at 5.30 p.m., after which Mr. R. Gordon Brown, A.R.I.B.A., will read his paper on "Some Problems in Architectural Education."

Imperial War Graves Architect.

MR. EDWARD MAUFE, R.A., principal architect for the United Kingdom of the Imperial War Graves Commission, has accepted an invitation to be honorary chief architect and artistic adviser to the Commission. He succeeds Lieutenant-Colonel Sir Frederick Kenyon, who is retiring from the appointment of honorary artistic adviser, which he has held since November, 1917.

Assistant Architect for Malaya.

MR. KENNETH J. BALL, A.R.I.B.A., of Hasland, Chesterfield, has been appointed assistant architect to the Public Works Department in Malaya, a country in which he spent three and a half years as a prisoner of war. He became an associate member of the R.I.B.A. after gaining his diploma at Sheffield in 1947, and has since held an appointment in the County Architect's Department at Derby.

Professional Announcements.

MESSRS. NOALL, COLBECK AND PARTNERS, quantity surveyors, of 97, Old Brompton-road, South Kensington, S.W.7, announce that Mr. W. H. Noall is no longer connected with the firm and, with effect from January 1, the title of the firm has been changed to Wilson Colbeck and Partners.

MR. R. G. COVELL, F.R.I.B.A., has taken into partnership Mr. A. E. Thurman Matthews, A.R.I.B.A., who has resigned his appointment as planning officer to the Architect of the London County Council. They will practise under the style of Covell and Matthews, F/A.R.I.B.A., at 299, Mitcham-road, Tooting, S.W.17 (Balham 6756), and will be pleased to receive trade catalogues, price lists and literature.

MR. HOWARD ROBERTSON, M.C., F.R.I.B.A., S.A.D.G., nominated as Royal Gold Medallist, 1949.

MR. C. D. SPRAGG, Secretary to the R.I.B.A., who is created C.B.E. in the New Year Honours. (*See Note.*)

COMING EVENTS

Tuesday, January 11.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.—"Some Problems in Architectural Education," by Mr. R. Gordon Brown, A.R.I.B.A. Following announcement of the award of prizes and studentships. 5.30 p.m.

Wednesday, January 12.

TOWN AND COUNTRY PLANNING ASSOCIATION.—"The Task of the Schuster Committee," by Professor W. A. Robson, Ph.D. Planning Centre, 28, King-st., W.C.2. 6.15 p.m.

THE ROYAL SANITARY INSTITUTE.—"The Design and Selection of Sanitary Fittings." Discussion to be opened by Mr. A. F. B. Nail, A.M.I.San.E. 90, Buckingham Palace-rd., S.W.1. 2.30 p.m.

LONDON ROTARY CLUB.—Speaker, Mr. D. C. Burgess, president, L.M.B.A. Connaught Rooms, Great Queen-st., W.C.2. 1 p.m.

FROM "THE BUILDER" OF 1849

Saturday, January 6, 1849.

The present would seem to be a turning point in the progress of art amongst us. The cry of "forward," uttered at first by timid voices and with the fear of powerful opponents before their eyes, is now heard loudly in more quarters than one, and begins to have echoes. We have been stationary too long, if not going *backwards*, say they; our arts are a disgrace to us, and the apathy and ignorance in respect of them, which exist even in the upper classes, deplorable and degrading. See what our forefathers did in architecture: look at the beautiful parish churches and noble cathedrals thickly spread over the country. And shall we, far, far advanced before them as we are in knowledge, and in science, which is systematized knowledge, with powers and means within our control of which they never dreamt, pronounce ourselves inferior to them, insist on imitation, and forbid even the attempt to advance? Is art never again to have vitality, and shall we not ourselves strike one blow for progress? (From a leader.)

THE ROYAL GOLD MEDALLIST

MR. HOWARD ROBERTSON AND HIS WORK

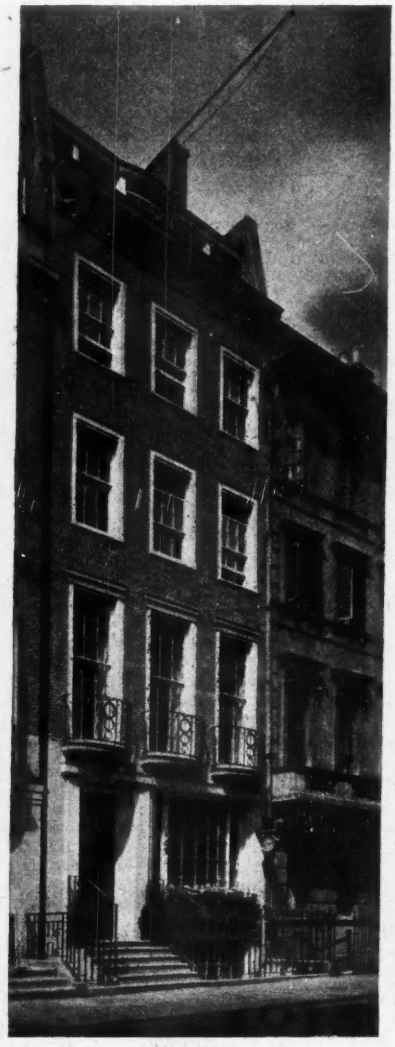
THE Council of the R.I.B.A. have nominated Mr. Howard Morley Robertson, M.C., F.R.I.B.A., S.A.D.G., Hon. A.I.A. (of the firm of Easton and Robertson), as recipient of the Royal Gold Medal for 1949. This will be confirmed at the Council meeting on January 11.

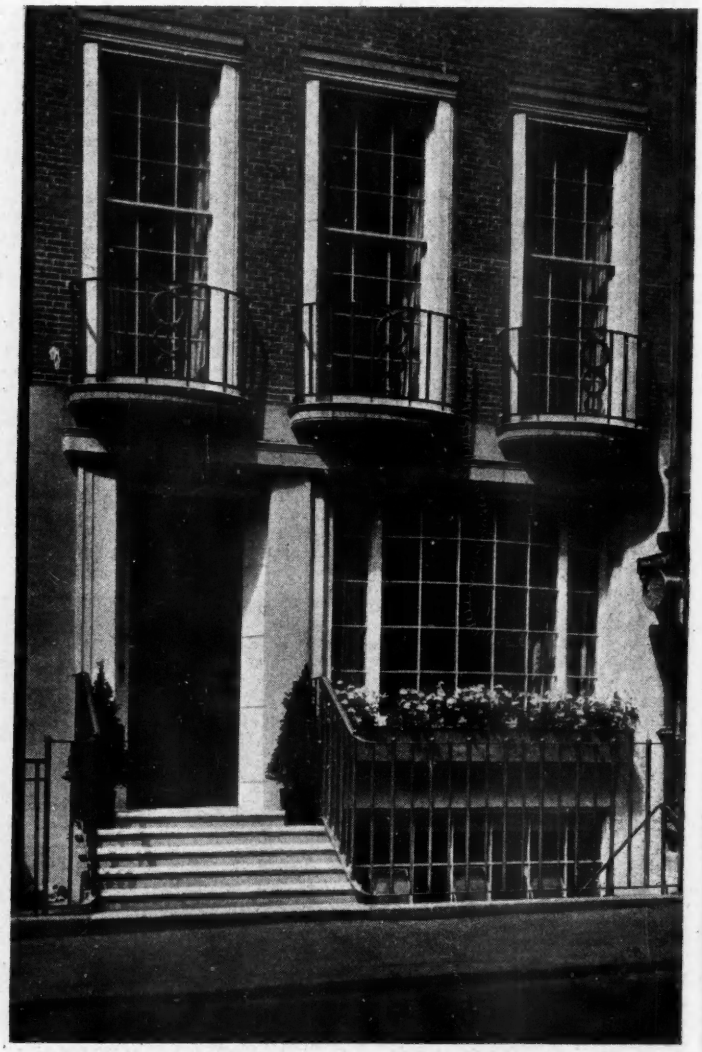
Mr. Robertson is hon. Corresponding Member of the American Institute of Architects. He is a past vice-President of the R.I.B.A.; a past-President of the Architectural Association (centenary year); a past-President of the Building Industries' National Council; and a member of Council of the R.I.B.A. He is 60.

Educated at Malvern College, the Architectural Association Schools (under H. P. G. Maule), and l'Ecole des Beaux Arts (Diploma, 1912), he worked as an architectural assistant in Boston, U.S.A., New York, France and London. After the 1914-18 war, in which he was awarded the M.C., he was appointed Principal of Architectural Association Schools in 1920, and continued as Principal and Director till 1935, when he resigned to concentrate on private practice, in which he has been engaged with Mr. J. Murray Easton since 1919, and subsequently with Mr. E. Stanley Hall till the latter's death in 1940.

In addition to combined work of teaching and the developing practice of the firm, Mr. Robertson has had several appointments of interest. Amongst these was post of technical adviser for some years to the Secretary-General of the League of Nations for the completion of the League buildings in Geneva, and in particular the design of the Assembly Hall and approaches. This was originally an assignment held in conjunction with Professor Ragnar Ostberg, of Stockholm, who was compelled to abandon it on grounds of health. Later he was a member of the jury for assessing in Turkey the International Competition for the erection of the Turkish Parliament buildings at Ankara, the other members being Ivar Tengbom, of Sweden, and W. M. Dudok, of Holland. During the second world war he acted as consulting architect to the National Service Hostels Corporation, and designed a large number of hostels and clubs for industrial workers and the Merchant Navy.

Subsequent to the war he was appointed as British representative on the International Board of Design for the preparation of the plans of the new United Nations Headquarters on the East River in New York, under the direction of Wallace K. Harrison, and was engaged in New York on this





Offices for " The Practitioner," Bentinck-street, W.

HOWARD ROBERTSON, F.R.I.B.A., S.A.D.G. (EASTON AND ROBERTSON), ARCHITECT

work in 1947. In the middle twenties between the wars he travelled extensively on the Continent and in the U.S.A. to study the modern movement in architecture, and contributed to the architectural Press many articles frequently illustrated by the photographs of Mr. F. R. Yerbury. He was awarded R.I.B.A. Godwin Bursary in 1933.

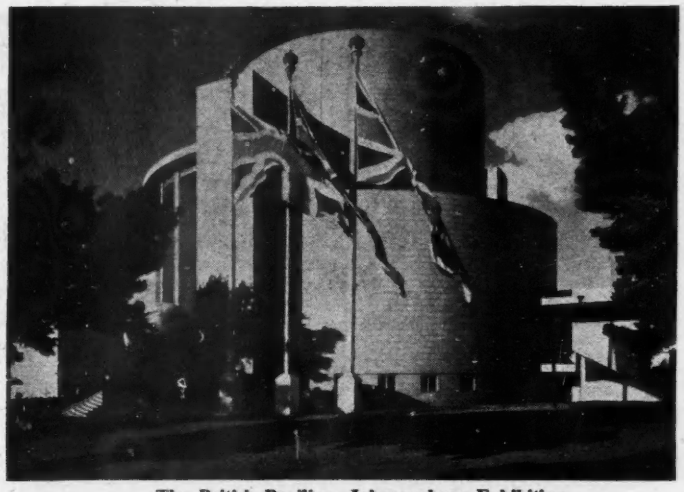
Mr. Robertson is the author of many articles and reviews on architectural subjects, and for some time was regular contributor of a "London Letter" to the Journal of the American Institute of Architects. He is the author of the following books: "Architecture Explained," "Principles of Architectural Composition," "Modern Architectural Design," "Architecture Arising," and "Reconstruction and the Home."

After starting practice in 1919 with Mr. J. Murray Easton, the firm's first big success was winning a limited competition for the Horticultural Hall, and in 1925 the British Pavilion in Paris, which led to further exhibition commissions for H.M. Government in Brussels, Johannesburg and New York. Mr. Robertson is now a member of the Architecture, Town Planning and Building Research Committee for the 1951 Festival of Britain.

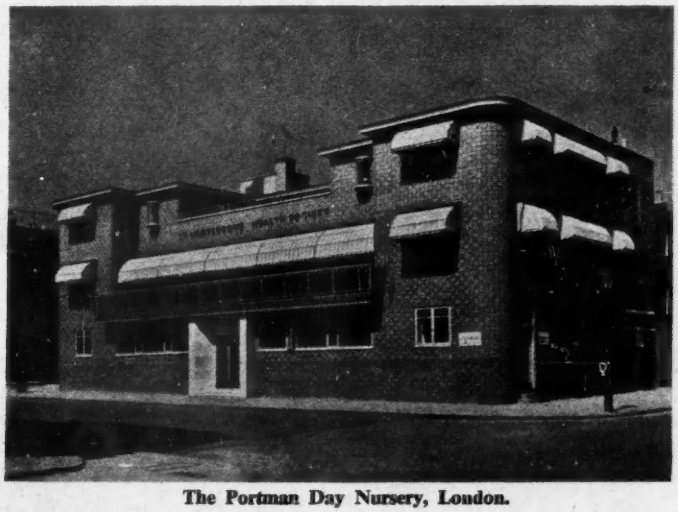
As a member of the firm of Easton and Robertson he is at present engaged on a wide range of work, including: A housing scheme for the St. Marylebone Borough Council; Hatfield Technical College; hospital work in Northern Ireland; some factories and general industrial work, as well as one or two provincial hotels; and the layout and architectural treatment of the passenger interiors of the "Rangitoto" and the "Rangitani," which are being built by the New Zealand Shipping Co.

In addition, Mr. Robertson, as a member of the firm of Stanley Hall, Easton and Robertson, has been responsible for the following buildings: Royal Horticultural Society's New Hall, Westminster (awarded London Architectural Bronze Medal) (completed 1928); 52, Cornhill, E.C. (1931); 5, Bentinck-street, for *The Practitioner* (1936); City of London Electricity Supply Company's showrooms (1939); Pavilions for H.M.G. New York World Fair (1939), Brussels (1935), Johannesburg (1936) and Paris (1926); the Ashmoleam Museum, Oxford (1939); Norbury House Hotel, Droitwich (1935); over the past 20 years works of modernisation at Savoy, Claridges and Berkeley hotels; Hospital for Sick Children, Gt. Ormond-street, London (awarded London Architectural Bronze Medal) (1936); Queen Charlotte's Hospital, Hammersmith (1939); Portman Day Nursery, Marylebone (1938); and Emergency Hospital, Godalming (1943).

The buildings we illustrate do not include major combined works of his firm but are drawn chiefly from Mr. Robertson's more personal and in some cases early contributions to the development of the practice.



The British Pavilion, Johannesburg Exhibition.



The Portman Day Nursery, London.

House on Lake Zug, Switzerland.

The bandstand, the ballroom, Savoy Hotel.

The staircase, Messrs. Holloway's Offices, South Audley-street.

HOWARD ROBERTSON, F.R.I.B.A., S.A.D.G. (EASTON AND ROBERTSON), ARCHITECT

BUILDING APPRENTICESHIP TO-DAY

The Work of the B.A.T.C. and the N.J.A.B.

BY OUR SPECIAL REPRESENTATIVE

APPRENTICESHIP in any one of the building trades to-day is a firm rung from which to start climbing the ladder of a career in the industry, yet apprentices are being enrolled in numbers far below those required. Architects, surveyors, builders, indeed the country as a whole, cannot escape the consequences if this continues. To architects, perhaps, the situation is singularly urgent, for hard-won ability at the drawing board cannot adequately be translated to the bricks and mortar on the site without that skill which only the hands of the trained craftsman possess.

Set out below are some of the circumstances of the present position, and details are given of the excellent work being done by the Building Apprenticeship and Training Council and the National Joint Apprenticeship Board, with its regional and local committees. The information given is by no means exhaustive, but there seems to be authoritative evidence that the success achieved to date could be much greater if more building employers would carry out their plain duty to take and train their quota of apprentices.

THE Minister of Works, MR. C. W. KEY. M.P., speaking in London early in December, said 22,000 to 25,000 apprentices must be recruited annually to maintain a skilled labour force in the industry. He added that we were falling considerably short of those figures.

Why is it that so many apprentices are required, and why are they not forthcoming in sufficient numbers? The answers to the first question are simple enough. The war seriously depleted the skilled labour force in the industry, and during the war few apprentices were engaged; even for those few there was insufficient work suitable for their training. Since the war, the potential building programme facing the industry has made a substantial increase in the rate of recruitment of craft apprentices imperative, while the annual rate of "wastage" through the retirement or death of ageing craftsmen, estimated at about 4 per cent., must be made good.

The answers to the second question are many-sided, and somewhat more complex, but, broadly speaking, they are: (*a*) The limited accommodation in the early post-war years in the technical schools and colleges offering junior building courses, the best possible introduction to apprenticeship in the industry; (*b*) the desire of many well-meaning parents to place their sons in "clean" jobs without too much regard for the long-term prospects of those jobs: a contributory factor to this attitude is, in some instances, the unhappy recollections of the older generation of the rather haphazard system of apprenticeship in the building industry in years gone by; (*c*) the reluctance of some building employers, in view of the general economic situation, to enter into long-term engagements with apprentices.

But the Minister's words sound a warning to all those whose interests and aspirations are concerned with the future of the building industry in this country. A shortage of apprentices to-day means a depleted force of skilled men in the years to come, and no industry can hope to maintain a proper standard and quality of output under such a handicap. Craftsmen cannot be turned out overnight. It takes time, study and not a little self-discipline on the part of the youth entering the industry from school, and it demands understanding, foresight and integrity over a period of years from the employer with whom he becomes indentured, to mention nothing of the skill and whole-hearted co-operation required from the craftsmen in whose direct care the apprentice is placed.

The B.A.T.C.

These are some of the problems which led in 1943 to the setting-up of the Building Apprenticeship and Training Council "to observe and advise on all matters concerning the recruitment and education and training of young persons for the industry, both for craftsmanship and management, and to encourage by all appropriate means the development of craft apprenticeship schemes on a comprehensive basis." In addition, the industry has organised itself on a national basis and the National Joint Apprenticeship Board has been set up to administer the Apprentice Scheme. The Board has formed Regional and Local Joint Apprenticeship Committees to provide guidance and supervision in recruitment, training, education, etc.

The work that has been done in the last five years or so in improving the standards of apprenticeship has succeeded in gaining for the apprentice a recognised place in the building industry team, with his interests guarded on all sides throughout his period of indenture. Recommendations made by the B.A.T.C. have now been favourably received by the National Joint Council for the Building Industry, and the National Working Rule Agreement provides that :—

(i) The apprenticeship is recorded in writing and provides that the employer undertakes to the best of his knowledge and ability to teach and instruct the apprentice in all things related to a particular craft.

(ii) Failure to comply with obligations relating to training of the apprentice is considered a breach of the agreement, and is investigated as such by some person appointed by a Joint Apprenticeship Committee of the Industry.

(iii) The Apprenticeship Agreement provides for the release of the apprentice up to the age of 18 for regular attendance during normal working hours at a technical course one day, or its equivalent, a week, or for his release for continuous attendance for an equivalent period each year.

There are now some 300 Local Joint Apprenticeship Committees all over the country. These Committees are representative of employers and operatives of the area in which they function, and make themselves responsible for the encouragement of recruitment, arranging apprenticeship agreements, arranging transfers of boys from one employer to another where circumstances are difficult locally, sending forward the names of approved apprentices for registration and the supervision

Apprentices being given a practical demonstration by a veteran craftsman.

Under the watchful eye of his instructor an apprentice tries his hand with the trowel.

An apprentice carpenter and joiner carries out a task while the working drawing is explained to his colleague by the instructor.

A group of apprentices indentured with Messrs. Holliday and Greenwood, Ltd., study progress on a site in West London.

of any Apprentice Master Scheme in the area.

The Apprentice Master Scheme is a *temporary* measure to meet the rather abnormal conditions of the war period and the early post-war years, owing to there being not enough suitable work on which to train apprentices. Under the Scheme apprentices work with an Apprentice Master on an actual contract, probably the reinstatement of destroyed council houses or the erection of new houses, school buildings, etc. With the approval of the Ministry of Works the local authority for whom the work is being done enters into a prime cost contract with the Apprentice Master for the construction of the specified work.

Owing to the special circumstances regarding the kind of labour used, in lieu of profit remuneration a fixed and moderate fee is paid to the Apprentice Master for his services in organising the work in a manner suited best to train the boys in the various crafts. The principal point to remember about the Apprentice Master Scheme, which was launched and is financed and administered by the Ministry of Works, with the co-operation of the Ministries of Health and Labour and the Regional Joint Apprenticeship Committees, is that it is quite definitely a temporary measure and will be discontinued as soon as circumstances allow and apprentices can be indentured in sufficient numbers in the normal way. Indeed, strong efforts are now being made to transfer to normal apprenticeship those boys who have worked under the Apprentice Master Scheme for twelve months. Over 3,000 boys have passed into the industry through this Scheme and about the same number are still being trained under it.

Registration of Apprentices.

One other important arrangement made by the B.A.T.C. to improve the status of the building apprentice is the inauguration of a complete register of approved apprentices. All youths whose applications are recommended by the industry's Joint Apprenticeship Committees because they are undergoing training in conditions complying with the minimum standards are placed on the Register, and at the completion of their apprenticeship are awarded a certificate stating that they have satisfactorily completed their craft training under B.A.T.C. auspices. Over 30,000 boys are on the Register so far, 17,000 more than in 1947, and it is considered that the day will come when these certificates will be the accepted proof that a man has had a craft training, and that in future no craftsman who wants regular employment with a firm of good standing will be without one.

Thus it may be said that the Building Apprenticeship and Training Council, the advisory body, and the National Joint Apprenticeship Board, with its Joint Apprenticeship Committees, have, in a comparatively short period, admirably responded to their terms of reference and reorganised building apprenticeship on sound and equitable lines.

What of the apprentice himself, however? How does a youth become an apprentice and what happens when he does? Interviewed by a *Builder* representative recently, MR. H. J. FALKUS, the vice-chairman of the London Regional Joint Apprenticeship Committee and a principal in the firm of Falkus Bros., Ltd., of Bishopsgate, gave details of the machinery that exists for enlisting those boys who desire to enter the building industry. "The J.A.C. contacts the local junior employment exchange and through them we get in touch with the schools," he said. "The schools let us know the number of boys who will be leaving at the end of the term, and we ask the principal of each school to give us a lead as to the number of boys who want to enter the industry. A meeting is then arranged so that we can talk to the boys and their parents at the school and give them details of the apprenticeship schemes and the advantages they offer. If we find we cannot absorb the boys by normal apprenticeship we adopt the temporary expedient of the Apprentice Master Scheme, and where there are 20 boys who want to come into the industry the Ministry of Works is asked to promote, in conjunction with the industry, an Apprentice Master Scheme on which the boys can begin their training.

"After a boy has served his six months' probation period with an Apprentice Master or in a normal apprenticeship a Deed of Apprenticeship is drawn up. This is an Agreement signed by the boy, his parent or guardian, the employer and a representative of the Joint Apprenticeship Committee. Among other things the Agreement safeguards the apprentice's right to time off during working hours to attend a technical school for a suitable course of technical and general education and binds the employer to pay the prescribed wages to the apprentice. Immediately the Apprenticeship Deed is signed the boy applies for registration."

Round Pegs in Round Holes.

In reply to the question: What happens with the misfit—the boy who seems to show little progress in the trade of his own choice? Mr. Falkus replied: "If a boy starts as a bricklayer, say, and after a few weeks seems to be not quite suitable for that trade, we suggest that it might be more advisable if he took up another craft to be agreed under the guidance of the Master. Under the Apprentice Master Scheme boys are expected to do work in all crafts so that eventually they are better equipped to decide upon the trade they wish to follow. We have very few failures, for every effort is made to place the boy in the trade most suited to his natural bent and ability."

As soon as the apprentice starts he attends a technical college or trade school for one day a week. This college or school is invariably the one nearest his home. In addition he attends evening classes on an average about three nights per week and this continues throughout the whole period of his apprenticeship.

Mr. Falkus, himself a trained craftsman, takes a keen interest in the academic progress made by the apprentices in his care. "We have had printed a special card for recording the boys' attendances at day and evening classes," he said. "The card bears the name of the firm, the apprentice's name and the trade in which he is being trained. Against the dates on which the apprentice should attend for instruction spaces are left for the instructors to insert their signatures certifying that the apprentice has attended the classes.

"With the aid of these cards and the reports we have every month from our own foremen on each job we are able to make a regular assessment of the progress being made by every apprentice. At the end of each year we organise a practical test for the apprentices. The results of these tests

and the reports of the apprentices' progress at day school and evening classes are then adjudged by the firm's own Apprenticeship Committee and prizes are awarded to encourage the lads in their work. The competition for these prizes is very keen."

And the work is of a very high standard, too, judging from the examination results of some of the apprentices. William Bryen, of 77, Abbey-grove, Abbey Wood, S.E., scored three firsts in the three subjects he took at Woolwich Polytechnic last year and was first again in all the five subjects he took this year. He passed with 100 per cent. marks in the trade test organised by the firm.

Victor Street, apprentice carpenter and joiner, of East Ham, was awarded 80 per cent. of marks in his examination at East Ham Technical College last year and repeated the performance this year. Both these apprentices have passed their Intermediate City and Guilds Examination and have been awarded B.A.T.C. prizes.

Leonard C. Walford, apprentice bricklayer, of Woolwich, is one of the lads transferred from the Apprentice Master Scheme to normal apprenticeship. He served two years under the A.M. Scheme, engaged on house-building work for Woolwich Borough Council at Eltham. He has now been an apprentice for three years and is engaged on high-class work of reconstruction at Grosvenor-crescent, London. On three nights a week he attends evening classes where his subjects are drawing, mathematics and shop work. Does he like being in the building industry? "Yes, I do," he says, "I like the work and I like the spirit among my workmates. I'm gradually picking up the mathematics part of my studies, for I know it will help me later on. When I have finished my apprenticeship I want to work on high-class bricklaying."

National Service and Wages.

"What," the potential building apprentice may ask, "about National Service? How do I get on there?" His registration as a building apprentice covers him for deferment from National Service, but he has to apply for deferment when he receives his call-up papers. Actually, it is wise to make it known beforehand at the local employment exchange that he is a registered apprentice. He can get deferment from military service for the whole period of his apprenticeship. This is by far the most popular arrangement with apprentices and less than five per cent. do not apply for deferment.

What are the wages of a building apprentice? These are established on a period of service and percentage basis in relation to the rates of pay for a skilled craftsman. In the London area apprentices' hourly rates are as follows:—Age 15, (25 per cent.) 8½d.; age 16, (33 1/3 per cent.) 11½d.; age 17, (50 per cent.) 1s. 5½d.; age 18, (62½ per cent.) 1s. 10d.; age 19, (75 per cent.) 2s. 2½d.; age 20, (87½ per cent.) 2s. 6½d.; age 21, qualified 2s. 11d.

There is one other organisation which has an important bearing on the building apprentice's life—the London Building Trades Apprentices' Sports and Welfare Association. This is a voluntary organisation, administered by representatives of the employers and of the operatives. Major Leslie Shingleton, O.B.E., is the President. The Association provides, on an area basis, for the recreational development of the London apprentices. Inter-area cricket and football matches and athletic meetings are arranged and other activities include rowing, boxing, film shows and lectures. It is to be hoped that other regions will follow this lead.

From the foregoing it is clear that the building apprentice to-day is in a vastly happier position than was his predecessors in the not far distant past. His chances of higher posts being offered him when he has finished his apprenticeship are immeasurably better than before and he can start on his career secure in the knowledge that he has undergone a period and form of training accepted throughout the industry and has a skilled trade at his finger-tips.

It was mentioned earlier that some employers are not anxious to involve themselves in long-term apprenticeship agreements in view of the general economic situation. Whatever justification there may have been for this view recent statements indicate there is less reason for it to exist now. The loosening up in the last few months of building controls has done much to widen the field of the builders' activity. Moreover, speaking in London recently, the Minister of Works said: "The reluctance of employers to enter into long-term engagements may be due to a feeling of uncertainty for the future. But grounds for that uncertainty no longer exist. Our present programme allows for sufficient work which will easily absorb the numbers of apprentices that are required. If only we could get that over to the industry I think we should have a good chance of maintaining the labour force that is necessary."

The view of the master builder is expressed by Mr. Falkus.

Urging the importance of more builders accepting apprentices for training, he says: "We must get builders to realise their responsibilities to their own industry. It is up to builders to employ apprentices so that those coming into the industry get the chance to learn the normal, orthodox methods of craftsmanship. The Apprentice Master Scheme, while it has great advantages, has one drawback. After the boys have been working together for about 12 months or so they become anxious to get out among the men and work with men. With normal apprenticeship there is only one apprentice to five craftsmen, the agreed proportion, and this desire is not so strong.

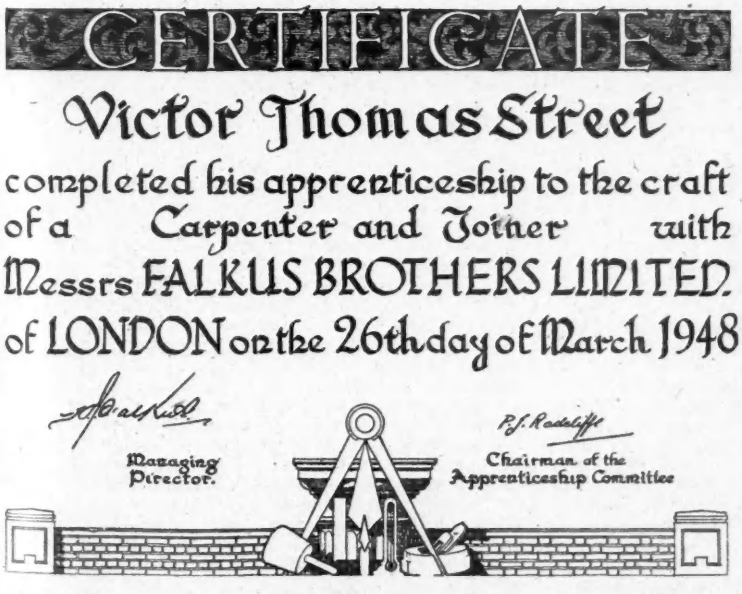
Life-blood of the Industry.

"We must look to the future and see to it that we have good craftsmen coming along; builders, by accepting apprentices now, will ensure the industry having skilled, competent craftsmen in future. We in London require about 5,000 apprentices per annum for the next 20 years or more and we are falling far short of that number. The difficulties under which employers are working at the present time are, I know, legion, but a long-term view must be taken, for apprenticeship is the very life-blood of the industry. We must aim at the situation where every employer with the proper facilities has in his employ the full number of apprentices proportionate to his labour strength. As for the ability of the industry to cope with further absorption into its ranks, there should be little difficulty on that score, for as more and more builders take on apprentices so is the case strengthened for suggesting to the Government that more work be released to the industry. There are many employers who have come to realise that by taking on apprentices they are ensuring that they have skilled leading men, junior foremen, and later, general foremen, in the years to come."

That is the general picture of building apprenticeship in this country to-day. Despite the obvious advantages of giving a lad a craft training, not enough apprentices are forthcoming. Bricklayer, Plasterer, Painter, Wood-machinist, and Mason, are among the trades which are falling most short of their apprentice intake targets, while only Carpenter and Plumber are maintaining the necessary numbers. Other trades in which apprentices are required are Glazier, Slater, Pavior and Asphalter, but it is plasterers and masons who are most needed.

The answer would seem to be very much with the building employer who does not see his way clear at the moment to taking on apprentices. It is an ill-advised builder who, when the industry needs apprentices and youths are ready and willing to learn, refuses to recognise, with Geoffrey Chaucer,

The lyf so short, the craft so long to lerne,
Thassay so hard, so sharp the conquering.


CERTIFICATE
Victor Thomas Street
completed his apprenticeship to the craft of a Carpenter and Joiner with Messrs FALKUS BROTHERS LIMITED of LONDON on the 26th day of March 1948
Managing Director.
Chairman of the Apprenticeship Committee

The certificate awarded by Messrs. Falkus Bros., Ltd., to their apprentices on the successful completion of five years' craft training.

View looking westward along the Boulevard with town hall on right.

THE MASTER PLAN FOR CRAWLEY NEW TOWN

ANTHONY MINOPRIO, M.A., B.ARCH., F.R.I.B.A., PLANNING CONSULTANT

A. G. SHEPPARD FIDLER, M.A., B.ARCH., CHIEF ARCHITECT TO THE CORPORATION

THE Master Plan for Crawley New Town has been developed during the past 12 months from the Preliminary Outline Plan which was published in December last. Since that time the plan has been closely studied by the Development Corporation and its officers, by Government Departments, local authorities and other bodies and by members of the public. As a result, many valuable suggestions have been made and adopted in the Master Plan.

Mr. A. Minoprio.

The purpose of the plan, which has been prepared by Mr Anthony Minoprio, M.A., B.Arch., F.R.I.B.A., A.M.T.P.I., the Corporation's Planning Consultant, is to provide a framework of roads and zones upon which the more detailed planning of the town can be based.

Preliminary schemes for the layout of Westgreen, the first neighbourhood unit to be built, and for the industrial area are now being prepared by the Chief Architect to the Corporation, Mr. A. G. Sheppard Fidler, M.A., B.Arch., A.R.I.B.A., A.M.T.P.I. A preliminary scheme for the town centre has also been prepared by Mr. Minoprio together with a sketch model for study purposes.

The principal difference between the Preliminary Outline Plan and the Master Plan is the much greater compactness of the latter, in which the area of the new town has been reduced by one-fifth and now covers approximately 4,000 acres.

Apart from this the Master Plan adheres to the main lines of the Preliminary Plan—a ring and radial pattern of roads with residential neighbourhoods grouped in a double ring around the town centre and a single industrial area at the north.

COMMUNICATIONS.—The road plan has to serve the dual purpose of carrying the London-Brighton (A.23) and Horsham-East Grinstead (A.264) traffic safely through the town and of providing for local communications, including safe crossings of the two railway lines and the Crawley by-pass. To effect this the proposed road pattern includes an inner and an outer ring, seven main radial roads, seven bridges and three underpasses.

In this plan the Crawley Ring, formed by extending the by-pass eastwards, carries both the through traffic streams and will eventually be linked to the Brighton Radial, the proposed motorway on the east side of the town, which, it is hoped, will be built in about 15 years' time. The future main approach to Crawley from London will therefore be from the north-east and not on A.23 as at present.

THE TOWN CENTRE.—The central area, covering 95 acres, is planned as an extension eastwards of the existing development around Crawley High-street which lies in the geographical centre of the town. The existing station, goods yard, shops and other facilities will thus be able to play an important part in the construction and social development of the new town.

The heart of the central area is a boulevard 400

yards long by 200 feet wide to which the main radial roads are connected. Public buildings for civic administration, education, recreation and other purposes are sited along the north side of this boulevard and at its east and west ends. Here, in the central green strip 100 feet wide, are preserved the fine chestnut, oak, maple and ash trees of the rectory garden which, combined with flowers, sculpture, fountains and other attractive features, will create a beautiful centre for the new town. To the south of the boulevard lies the main shopping and business area. Here the principal shopping streets are laid out on a cruciform plan with one street leading from the town hall towards the railway station and another running eastwards from Crawley High-street to the new retail market. The shops are provided with rear access for deliveries of goods, and with car parks connected to the shopping streets by pedestrian ways. Carriageways, forty feet wide, are proposed in these streets, with 20-ft. footways planted with trees. The bus station is placed between the railway station and the Monastery, within 200 yards of the new shopping street. As this area is not at present available for development, the possibility of a temporary bus station is now being considered.

INDUSTRY.—An area of 264 gross acres, mostly lying between the London Road and main railway line at the north of the town, has been selected to provide factory sites for an estimated industrial population of 8,500 workers. This land is free from existing development, is fairly flat, is near to Gatwick airport and station and to the town sewage disposal works, and is well related to the plan of the town as a whole. Rail sidings can be brought into the majority of sites without difficulty. The area has the great advantage that it can be opened up for development at once from the London Road.

The industrial area is planned with an administrative centre, clubs and canteens and is surrounded by a green belt. There is ample room for expansion if this should prove necessary.

Additional areas for service industries, such as builders' yards and garages, are provided to the south of the town centre, at Three Bridges, and at the centres of residential neighbourhoods, amounting in all to approximately 75 acres.

RESIDENTIAL AREAS.—The size and location of the residential neighbourhoods have been influenced by the existing development which it is desired to retain wherever possible by the cutting up of the designated area by main roads and railway lines which form natural boundaries and by the desire to keep the neighbourhoods to a convenient size.

In all, nine residential areas are proposed, varying in population from 4,100 to 7,600, the average being 5,250, which approximates to the existing population in Crawley. Six of these units are extensions of the existing development in the area; local place names are retained in all cases. The four neighbourhoods nearest to the town centre have been planned for a net residential density of 29 persons per acre, while the five outer neighbourhoods are at 26 persons per acre, in order to allow for a more open type of development. In order to encourage social balance all neighbourhoods will have dwellings of different types and there will be no large areas of one-class housing. Each neighbourhood has its own centre where the primary school, the local shops, church, inns, hall, clinic, garages, builders' yards and other facilities would be placed, usually grouped around a green.

The compact planning of the neighbourhoods ensures that the distance to the neighbourhood centres from the furthermost houses is rarely in excess of a ten minutes' walk. Most houses in the town are within 1¼ miles of the town centre. Road access to the neighbourhoods has been planned from the radial roads, the number of entries on each side to the neighbourhood being normally restricted to two. A system of footpaths and cycle tracks has been planned, wherever possible, away from the busy roads, to link the homes with the neighbourhood centre, with the town centre, the industrial area, with other neighbourhoods and the campus sites.

EDUCATION.—The importance attached to the development of education in Britain as envisaged by the Education Act, 1944, is strikingly shown in the Master Plan for Crawley, in which sites for educational buildings cover 370 acres, or nearly 10 per cent. of the total area of the town.

The new and wider conception of education is that of a vitalising and continuous process touching people of all ages in every sphere of life. This is given visible expression in the Crawley Plan by the grouping of educational buildings with buildings for administrative, social, cultural or health purposes at focal points in the town plan, either at the neighbourhood centres, on campus sites or in the town centre.

The nursery schools and combined junior-infant schools are placed within the residential areas close to the homes they serve. Secondary schools, which draw their students from a larger area, have been grouped in threes on three large campus sites. The Technical College and County College are placed in the town centre adjoining the Library and the Town Hall.

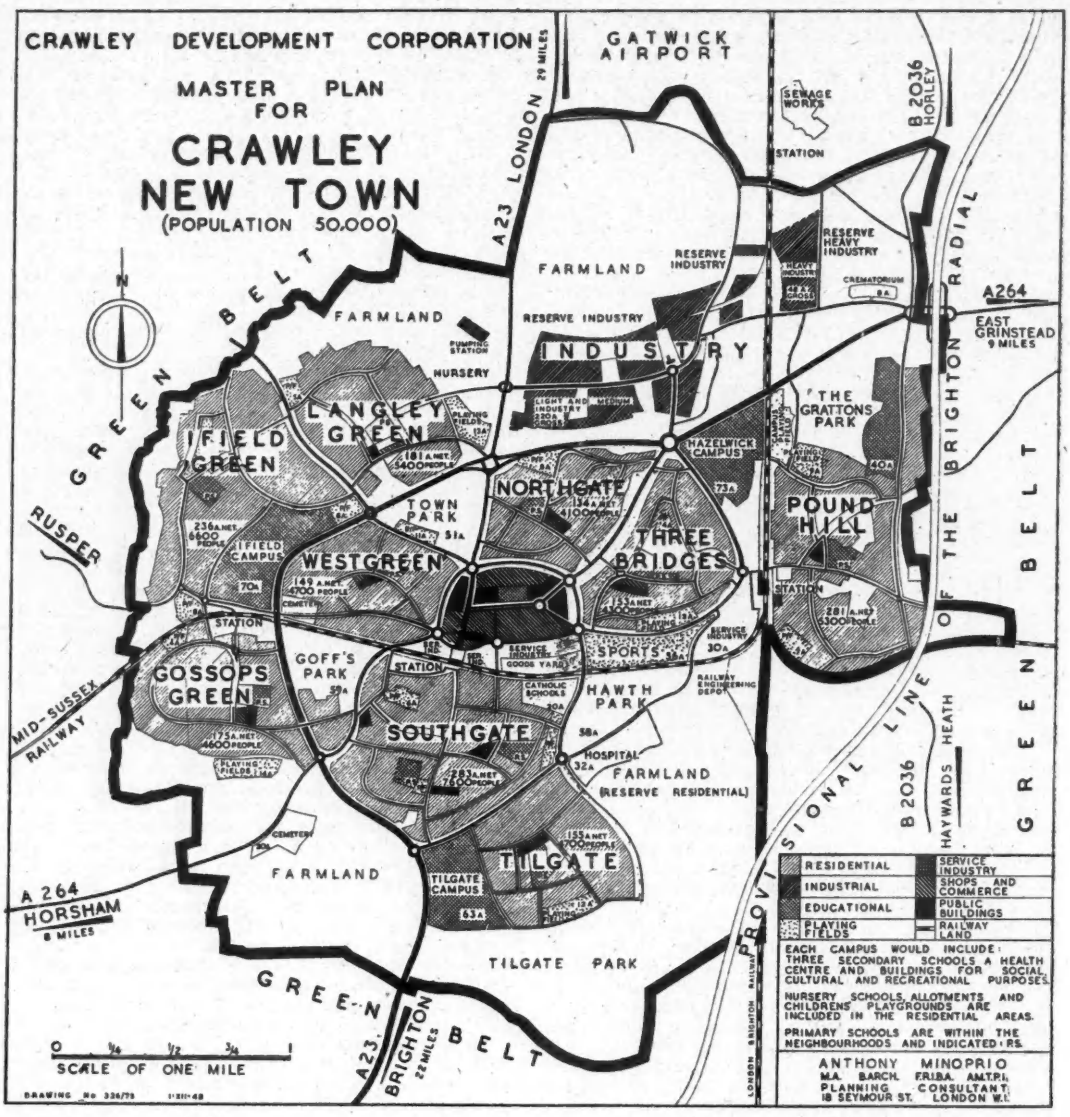
On the three campus sites at Hazelwick, Tilgate and Ifield the grouping of the secondary schools with other buildings which cannot economically be provided for every neighourhood, will not only provide exceptional opportunities for significant architectural treatment but will make for substantial economies in land and buildings, staffing and maintenance. The location of these three sites adjoining the Crawley Ring will simplify transport and the organisation of bus routes.

OPEN SPACES.—The main problem in planning the open spaces which are so necessary to the modern town is to strike a balance between the compact urban development which is desirable on grounds of convenience and economy, and the reasonable provision of open spaces for amenity and recreation. Within the Crawley Ring, three areas have been selected as parks, all of them being within a few hundred yards of the town centre. Two additional parks to serve the outer neighbourhoods are provided in the attractive, well-timbered areas of the Grattons and Tilgate. The latter contains a natural site for an open air theatre, picturesque lakes and a fine mansion capable of adaptation as a country club. There are good golf courses at Ifield, Handcross and Copthorne, within easy reach of the town.

Each neighbourhood will have its own playing fields, gardens, allotments and children's playgrounds. In addition a town sports ground of 36 acres is provided between Crawley and Three Bridges where a stadium, cricket, football and hockey grounds, tennis courts and bowling greens may be planned. In all, parks, playing fields, allotments and children's playgrounds total 629 acres or 12.5 acres per 1,000 population.

Farm land and nursery gardens amounting to 1,150 acres or nearly one-fifth of the designated area have been retained for agriculture. An area of 20 acres has been reserved for a cemetery on the south side of the Horsham Road near Great Buckswood Farm and an eight-acre site for a crematorium is proposed in Forge Wood at the north-east of the area.

HEALTH SERVICES AND RELIGIOUS BUILDINGS.—The existing Crawley and District Hospital in Westgreen will ultimately be replaced by a 500-bed Regional General Hospital situated on the fine south-eastern slopes adjoining the Hawth Park. Health centres, of which there may be three in the town, could conveniently be placed on the campus sites. Child welfare and maternity clinics will be associated with the nursery schools and day nurseries at the neighbourhood centres. Provision within the neighbourhoods will also be made for homes for old people and for children deprived of normal home life.



The Sussex Churches Joint Planning Committee have been consulted with regard to the buildings likely to be required by the various denominations represented on the Committee. It appears that some 24 buildings may be needed to serve the town, of which 11 are existing. The Church of England will be represented in every neighbourhood either by a church or church hall and sites for buildings for other denominations have also been proposed.

DEVELOPMENT.—It is the Corporation's intention that the town should be built in about 15 years. Residential development is planned to take place concurrently with industrial buildings, shops, services and other buildings.

The first four neighbourhoods will be developed in a clock-wise direction within the Crawley Ring, commencing with Westgreen. This will be followed by the completion of the Pound Hill and Tilgate neighbourhoods and finally by Langley Green, Ifield Green and Gossops Green. Campus sites will be developed as the need for secondary schools arises and industrial development will begin near the Brighton Road and move in an easterly direction.

STATISTICAL INFORMATION

GENERAL

Designated area	5,920 acres, or 9.2 sq. miles.
Developed area of town	4,000 acres approx., or 6.2 sq. miles.
Present population, approximately	9,000 people.
Proposed ultimate population	50,000 people.
Overall town density	12.5 persons per acre.
Diameter of town (north to south)	2½ miles.
Diameter of town (east to west)	3½ miles.

RESIDENTIAL

Nine residential neighbourhoods, varying from	4,100 to 7,600 population.
Gross residential acreage	2,100 acres.
Net residential acreage	1,747 acres.

(Net acreage excludes primary schools, nursery schools, neighbourhood centres, woods and playing fields, but includes allotments, children's playgrounds and amenity gardens.)

Average population in the nine neighbourhood units	5,250.
Average net residential density	27 persons per acre.
Total land allocated to neighbourhood centres	39 acres.
Neighbourhood playing fields	148 acres (approx. 3.0 acres per thousand).
Population within Ring at 29 p.p.a.	22,191.
Population outside Ring at 26 p.p.a.	27,870.

Population in each unit :—	*Net acreage.*	*Approximate population*
1. Westgreen ..	149	4,700
2. Northgate ..	134	4,100
3. Three Bridges ..	153	4,300
4. Southgate ..	283	7,600
5. Gossops ..	175	4,600
6. Tilgate ..	155	4,700
7. Ifield	236	6,600
8. Langley	181	5,400
9. Pound Hill ..	281	5,300
10. Town Centre ..	95	1,500

Industrial

Board of Trade's estimate of number of industrial workers	8,500.
Gross acreage reserved for industry	264 acres.
Medium and light industry	220 acres.
Heavy industry	44 acres.
Net acreage is approximately .. .. (224 acres at 38 workers per net acre—8,500)	224 acres.
Service industry .. .. (at Town Centre in three areas, 24 acres ; at Three Bridges, 30 acres.)	54 acres.

Provision has also been made in the neighbourhood centres for small local areas of service industries, in addition to the 54 acres.

Town Centre

Gross acreage, approximately .. .. (within inner ring road)	95 acres.
Proposed population	1,500.
Shopping frontage	5,000-6,000 ft.
Capacity of car parks within inner ring	1,200 cars.

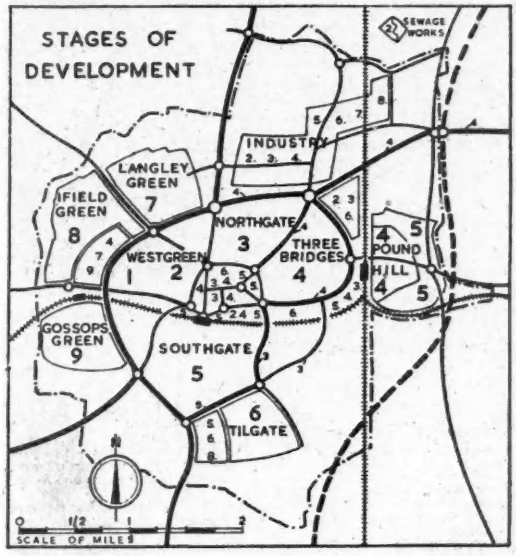
Educational Areas

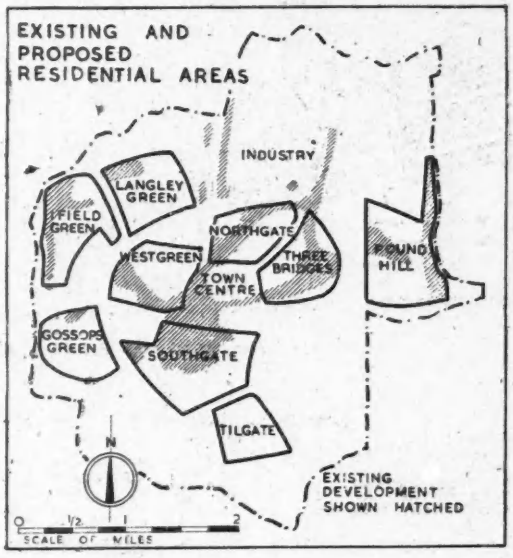
Nursery schools .. .. (30 required within residential neighbourhoods)	19 acres.
Primary schools .. .. (10 required within residential neighbourhoods, excluding R.C. and private schools)	79 acres.
Campus sites—	
Hazelwick (60 acres, plus 13 acres)	73 acres.
Ifield	70 acres.
Tilgate	63 acres.
Milton Mount College	40 acres.
Pound Hill Convent	5 acres.
County College and College of Further Education ..	3 acres.
R.C. Primary and Secondary School	20 acres.
	372 acres.

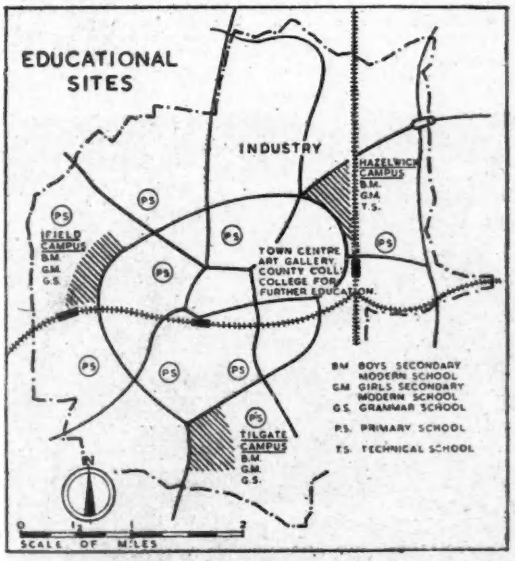
Parks

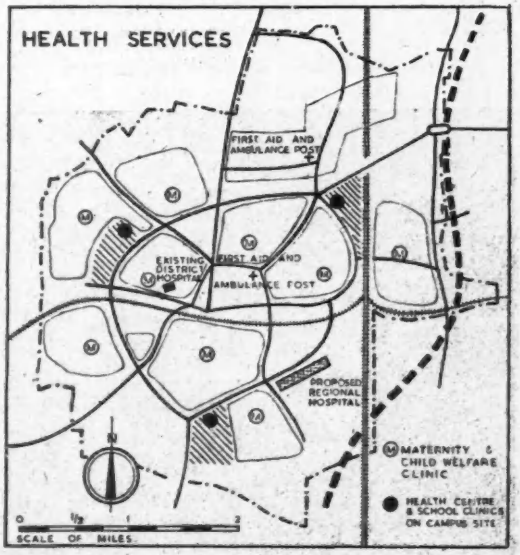
The Hawth	58 acres.
Goffs Park	59 acres.
The Grattons	97 acres.
Tilgate	86 acres.
Town Park (excluding Westgreen Playing Fields) ..	51 acres.

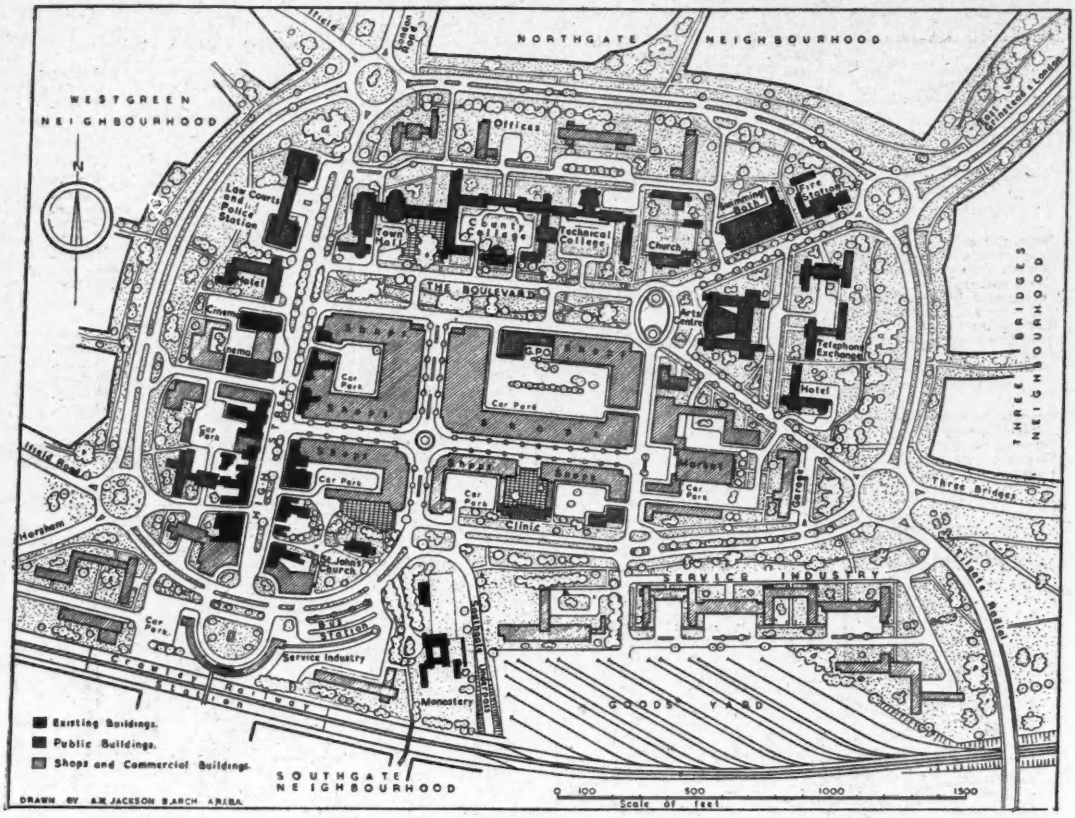
The actual acreages for parkland in The Grattons and Tilgate are provisional and subject to detailed study. Some of the land in these areas may continue to be used for farming or other purposes.








HEALTH SERVICES
FIRST AID AND AMBULANCE POST
EXISTING DISTRICT HOSPITAL
FIRST AID AND AMBULANCE POST
PROPOSED REGIONAL HOSPITAL
M MATERNITY & CHILD WELFARE CLINIC
HEALTH CENTRE & SCHOOL CLINICS ON CAMPUS SITE
SCALE OF MILES



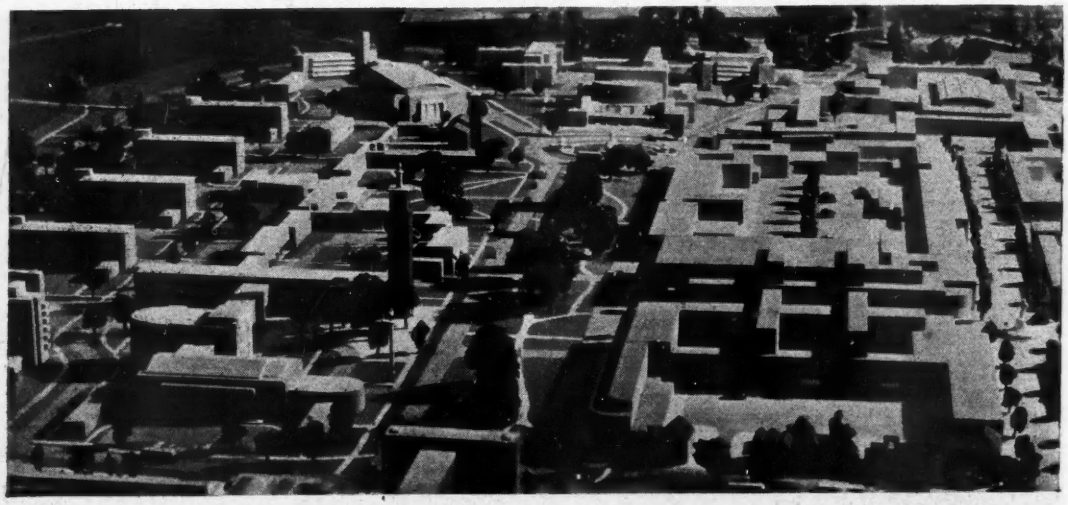
The central area. *Below*: **Model of central area, from the West.**

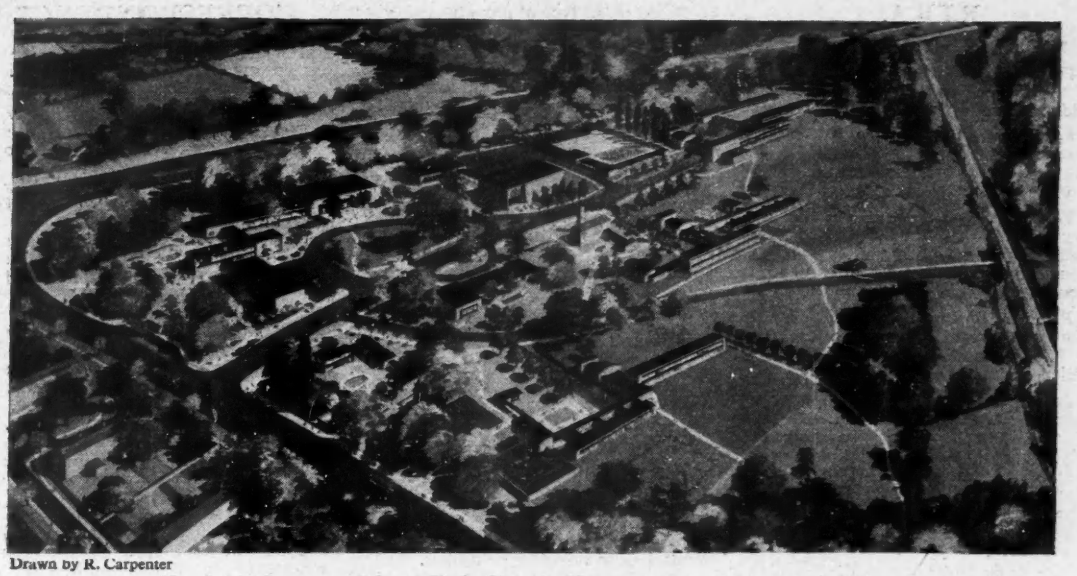
Open Spaces Summary

Parks	351 acres	
Town Sports	36 acres	230 acres or 4.6 per 1,000 population.
Neighbourhood Playing Fields	146 acres	
Children's playgrounds	48 acres	
Allotments	48 acres	
Cemeteries and Crematorium	36 acres	
	665 acres, or 13.3 per 1,000 population.	

Major New Road Proposals

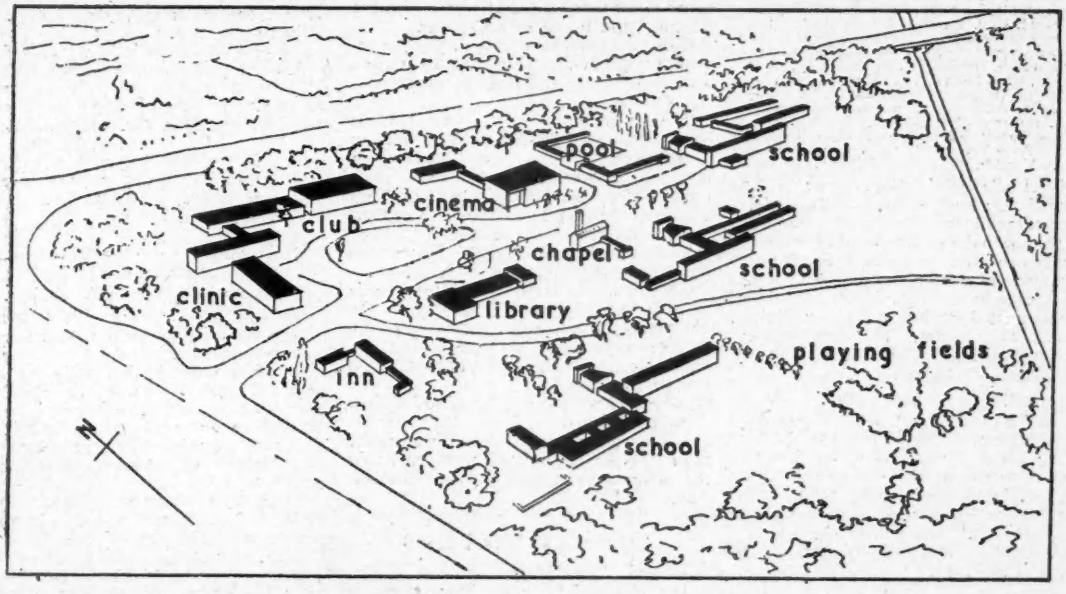
	Miles	Remarks
Crawley Ring	3½	6 new roundabouts. Bridge over Mid-Sussex line S.W. of Three Bridges.
Inner Ring	1½	5 new roundabouts.
Main streets in Town Centre	½	1 new roundabout.
Inner Ring to Motorway	2	Viaduct over London - Brighton railway. Flyover junction with motorway and Balcombe Road.
Three Bridges Radial	½	
Tilgate Radial	1½	Bridge over Mid-Sussex railway.
A.23 at Broadfield to Crawley Ring.	½	Widening may be required.
Horsham Radial	¾	Diversion through Goffs Park. Bridge over Mid-Sussex railway line. Bridge over A.23 bypass giving access to Gossops Green.
Rusper Radial	¾	Underpass to Crawley Ring. Bridge over railway at Ifield, giving access to Gossops Green.
Ifield Radial	1½	





Drawn by R. Carpenter

Hazelwick Campus. *Below.* **Key. The schools proposed are (a) technical, (b) boys' modern, (c) girls' modern.**



	Miles	*Remarks*
Gatwick Road from A.23 to Crawley Ring, via Tinsley Lane.	2	"D" junction at Lowfield Heath. "D" junction at Gatwick. Bridge over industrial railway siding.
Inner Ring to Southgate ..	¼	Underpass to the east of Monastery.
Industrial road from A.23 to Brighton Motorway.	2	Underpass to main railway line. Roundabout at Administration Centre.
New Major Roads	17¼ miles.	
Roundabouts	13 new (one existing).	
New Bridges	7.	
New Underpasses	3.	
New Flyover on Motorway	1.	
Total land requirements for Major Roads, Roundabouts and Bridges	241 acres.	

(Exclusive of Flyover on Motorway as this might be sited wholly or partly outside the designated area.)

LAND FOR OTHER PURPOSES

Cemetery at Westgreen	8 acres	36 acres.
Cemetery at Broadfield	20 acres	
Crematorium at Forge Wood ..	8 acres	
Land for Railway purposes—		
Running tracks	74 acres	112 acres.
Engineering depôt	14 acres	
Industrial goods yard	10 acres	
Town goods yard	14 acres	
Hospital	30 acres	

SUMMARY OF LAND USE

Within developed perimeter—		
Town Centre	95 acres.	
Residential (net)	1,747 acres.	
Neighbourhood Centres	39 acres.	
Industrial	264 acres.	
Service Industries (main areas) ..	54 acres.	
Educational (excluding Technical and County Colleges)	369 acres.	
Playing Fields and Town Sports ..	189 acres.	
Parks	351 acres.	
Railway land	112 acres.	
Major Roads, Bridges, Roundabouts	241 acres.	
Crematorium and Cemeteries ..	36 acres.	
Hospital	30 acres.	
Nursery gardens, roadside verges, unused land and other open spaces	473 acres.	4,000 acres.
Outside developed perimeter—		
Farms and nursery gardens,	1,150 acres.	
Green wedges, roadside verges, unused land and other open spaces within designated area ..	770 acres.	1,920 acres.
Designated area		5,920 acres.

R.I.B.A.

NOTES FROM THE MINUTES

Following are notes from the minutes of the Council meeting of the R.I.B.A., held on Tuesday, December 14, 1948 :—

Appointment : Committee to Consider Present and Future of Private Architectural Practice.—Mr. S. W. Milburn (F), in place of Mr. Howard Robertson (F).

The Honorary Associateship : The Secretary reported that Mr. F. G. Baker, lately Chief Clerk, R.I.B.A., had accepted the Council's nomination for election to the Honorary Associateship.

R.I.B.A. Diploma in Town Planning : The Council awarded the R.I.B.A. Diploma in Town Planning to Mr. Maurice B. Patience (A).

International Union of Architects : By arrangement with the International Union of Architects the Council have approved of the Institute assuming administrative responsibility for the British National Committee of the International Union. The following have been invited to accept appointment to the British National Committee :

Professor Sir Patrick Abercrombie (F), A. F. B. Anderson (F), S. L. G. Beaufoy (F) (Ministry of Town and Country Planning), H. T. Cadbury-Brown (A), Kenneth Campbell (A), H. P. Cart de Lafontaine (F), Anthony Chitty (F), Professor H. O. Corfiato (F), R. A. Duncan (A), R. E. Enthoven (F), H. M. Fletcher (F), J. H. Forshaw (F) (Ministry of Health), R. J. Gardner-Medwin (A) (Scotland), Frederick Gibberd (F), Erno Goldfinger (L), H. S. Goodhart-Rendel (F), Leslie Grahame-Thomson (F) (Scotland), Professor W. G. Holford (F), Arthur Ling (A), H. V. Lobb (F), B. Lubetkin (unattached), F. McArdle (F) (Northern Ireland), R. H. Matthew (A), J. M. Richards (A), Howard Robertson (F), W. A. Rutter (F) (Ministry of Works), The Hon. Godfrey Samuel (F), Professor Gordon Stephenson (F), Sir Percy Thomas (F) (Wales), F. R. Yerbury (Hon. A), and F. R. S. Yorke (F).

Allied Societies' Conference : The Council approved, subject to the concurrence of the Finance and House Committee, the recommendation of the Allied Societies' Conference that nominated deputies be permitted to attend the meetings of the Conference in the unavoidable absence of the nominated representative of a Society, Branch or Chapter. The new arrangement will take effect from the beginning of the Session, 1949-1950.

R.I.B.A. Architecture Bronze Medal : Berks, Bucks and Oxon A.A. : The Council approved the recommendation of the Jury of the Berks, Bucks and Oxon Architectural Association that the award of the R.I.B.A. Architecture Bronze Medal in the area for the period 1936-1946 be made in favour of St. Luke's Church, Cowley-road, Oxford, designed by Mr. H. S. Rogers, F.S.A. (F).

LAND VALUATION FEES

T. and C.P. Act, 1947 : *Fees for Professional Services :* The Council approved the adoption of the following scale of fees issued by the Royal Institution of Chartered Surveyors in respect of professional services in connection with claims for depreciation of land values under Part VI of the Town and Country Planning Act, 1947 :—

[The question of fees in respect of the determination of development charges is under consideration.]

THE ROYAL INSTITUTION OF CHARTERED SURVEYORS

CLAIMS FOR DEPRECIATION OF LAND VALUES : FEES AS BETWEEN SURVEYOR AND CLIENT.

(*a*) The rates shown in the Scale below must be treated as a general guide only, and should be applied with discretion. The intricacy and difficulty of the services rendered are likely to vary considerably, according to the type of property and other circumstances which may arise in a particular case. The rates of remuneration, therefore, should not be regarded as rigid, and if the scale fee in any given case appears too high or too low in relation to the work done, it should be adjusted to the circumstances.

(*b*) The fee in each case covers inspection, the completion of the relevant parts and the submission of the prescribed form, and, where possible, agreeing the claim with the appropriate authority, but is exclusive of services rendered to the claimant in connection with an appeal to any tribunal.

(*c*) A separate fee will normally be charged for each unit of claim.

(*d*) The fees shown below are in all cases exclusive of travelling and other expenses, disbursements, copies of documents and lithography.

SCALE.

(1) *Where a claim is made :*

Five guineas per cent. on the first £100 of the unrestricted value as settled with the Central Land Board or on appeal.

Two guineas per cent. on the next £400 of the unrestricted value as settled with the Central Land Board or on appeal.

One guinea per cent. on the next £500 of the unrestricted value as settled with the Central Land Board or on appeal.

Half guinea per cent. on the next £49,000 of the unrestricted value as settled with the Central Land Board or on appeal.

One-third guineas per cent. on the remainder of the unrestricted value as settled with the Central Land Board or on appeal.

Notes—

(i) Fees on the above scale are payable by the client, who shall be credited with any contribution towards such fees which may be recoverable from the Central Land Board. If, however, the contribution from the Board should be higher than the fee on the above scale (as may happen in exceptional cases) the fee payable by the client shall be the said contribution.

(ii) One-third of the estimated fee is payable when the claim is lodged and the balance of the fee when the amount of the development value (*i.e.*, the claim) has been agreed with the Central Land Board or fixed on appeal.

(2) *Where a surveyor is instructed and no claim is advised :*

Fee by arrangement, depending on the extent of the responsibility involved and the other circumstances of the particular case.

COMPETITION NEWS

A Painted Wall Panel.

The National Cash Register Company (Manufacturing), Ltd., propose to install in the main entrance hall of the office block of their new factory in Dundee a painted panel representing the Scottish scene, and have asked the Royal Society of Arts to conduct a competition for designs. Premiums of £100, £75 and £50 are offered, and a board of assessors—comprising Miss Anna Zinkeisen, Mr. S. H. Jowett, Mr. D. A. Butlin and Mr. W. R. F. Bennett, L.R.I.B.A.—has been appointed. The competition is open to all artists of British nationality by birth. If the winning design, in the opinion of the promoters, proves suitable, the artist will be commissioned to execute it as a panel 12 ft. by 6 ft. The subject is left to the artist.

Conditions may be obtained from the Secretary, Royal Society of Arts, 6-8, John Adam-street, Adelphi, London, W.C.2, to whom designs must be sent by May 2 next.

CORRESPONDENCE

Norwich Cathedral Choir Stalls.

TO THE EDITOR OF *The Builder.*

SIR,—With reference to the letter of Mr. H. L. Mann, in *The Builder* of December 17, it is important to state exactly what has recently happened to the stalls in Norwich Cathedral.

It is unnecessary to describe earlier rearrangements, of which there had been several.

There was, till recently, no access across the transepts beneath the central tower owing to a row of stalls stretching from pier to pier on each side. These were in their original positions but had been lowered. Early in the war it was regarded as a necessary fire precaution to make a division in these stalls so as to get direct access across the transepts. The severed stalls were not removed, but could have been at a moment's notice. The stalls so divided have now been detached (and used as sedilia at the high altar) in order to enable access to be obtained from the transepts to the choir. No ancient carved or moulded work has actually been mutilated or removed and two ancient stall ends discarded in the nineteenth-century alterations have been brought back into use. Part of the inconvenience and danger was due to alterations in floor levels made in Victorian times east of the choir. If it was so desired, the stalls now displaced could easily be put back.

I should like to point out that I have confined myself to a statement of the actual facts as it would be improper for me to express any opinion on the other questions raised in Mr. Mann's letter.

F. C. EELES,
General Secretary, Central Council for the Care of Churches.
Church House,
Dean's Yard, S.W.1.

Surveying: "—— or Equivalent Examination."

TO THE EDITOR OF *The Builder.*

SIR,—Included among the numerous posts advertised by local authorities and Government departments for surveyors are those which stipulate that applicants must hold the Final Examination of the Royal Institution of Chartered Surveyors (Building Section) or "equivalent examination." Many persons interested in these posts ask, "What is an 'equivalent examination'?"

I cite the case of an applicant who has not been articled to a surveyor; he is unable to obtain permission to sit for the R.I.C.S. examination and, therefore, is at a disadvantage because he does not know what the authorities consider to be an equivalent examination. Then there is the case of the applicant who started his training as an apprentice in one of the building trades, and who has no chance of applying for one of these posts, being barred from many of the professional examinations simply because he did his training with a hammer or trowel in his hand instead of a pencil and set square, although he may have had a good theoretical training at one of the many technical schools.

I am in the latter class and, in stating my case, hope that perhaps one of the readers who is responsible for this type of advertisement will be kind enough to answer this letter, informing me whether or not the following examinations are the equivalent to the Final Examination of the R.I.C.S. If it is considered they are not equivalent, it will save many persons like myself wasting further time applying for this type of post, and it may

also bring to light the plight craftsmen are in—they who, after all, are the backbone of the building industry, and as such should be given a fair chance to reach the top if they so desire.

My training started with six years' evening classes at the city technical college in building subjects, being awarded the following certificates on completion of the course:—

(1) Ordinary National Certificate in Building;

(2) Higher National Certificate in Building;

(3) Final Certificate in Builders' Quantities (City and Guilds).

Further studies for examinations in which I received permission to sit, and passed, are as follows:—

(1) Examination for candidates for the office of Building Surveyor under Local Authorities, held by the Royal Institute of British Architects;

(2) Licentiate Diploma Examination of the Institute of Builders;

(3) The Building Inspectors' Examination of the Institution of Municipal Engineers;

(4) The Sanitary Science as Applied to Buildings and Public Works examination of the Royal Sanitary Institute;

(5) Clerk of Works Final Examination of the Institute of Clerks of Works.

These examination successes complete my studying up to the present time. I could pursue my studies with a view to securing further examination certificates in the building profession, but a point of immediate concern to me, and probably to many others similarly affected, is whether a barrier now operates to prevent non-articled but otherwise trained practical men, with the necessary theoretical training, from attaining the professional examination standards which I have referred to. If so, can it be removed?

In conclusion, I would add that the Education Act, 1944, is instrumental in providing equal opportunities for all intending entrants to many of the professions in the future, without regard to financial status.

"APPRENTICED."

Architects and House Agency.

TO THE EDITOR OF *The Builder*.

SIR,—I observe that, at the meeting of the Architects' Registration Council, it was proposed to exclude architects from the practice of house agency. Any proposal that seeks, for one reason or another, to eliminate overlapping is to the good. This particular case is only one of many.

I am convinced that the imperative need is for a commission to examine the relationships of all the professions and to make such recommendations as would bring order out of chaos.

The professions are in isolated units, the Trades Unions a compact organisation exercising great economic influence.

A. W. CRAMPTON, F.R.I.C.S.

London, N.W.6.

Chief Architect for Glenrothes Wanted.

GLENROTHES DEVELOPMENT CORPORATION announce that applications are invited for the post of chief architect and planning officer to the Corporation. Candidates should be familiar with the latest developments in planning standards and technique appropriate to a development of this scale and character. The salary ranges for the appointment will be £1,500 to £1,750 per annum. Applications should be submitted to the Interim Secretary, Glenrothes Corporation, County Buildings, Cupar, Fife.

THE WAR DEPARTMENT SCHEDULE, 1948

Reviewed by

STANLEY HOOKWAY, F.R.I.C.S.

BY analogy with those star-like bodies which return to view in the firmament at periodic intervals as they revolve in elliptical orbits with the sun as focus, we may borrow the astronomer's phraseology and describe the now departed A.D. 1948 as a "comet-year" for the quantity surveyor, for it was a year in which two of his major comets returned to perihelion; in the early days the Standard Method of Measurement reappeared with renewed vigour and intensity, and as the year was closing the War Department Schedule* came into view again, refurbished and amplified.

The W.D. Schedule has a certain air about it; it remains, as in previous editions, self-sufficient—"*all work paid for at prices in the Schedule is to be measured in accordance with the instructions contained . . . without reference to any other method or custom*"—which is, perhaps, not inappropriate in a document bearing the Royal Insignia. There is the simple date, 1948, upon the cover, without any reference to former editions; just a note as to its paternity—War Office, by Command of the Army Council—and that is that. No preface, foreword or other introduction; and no note of guidance to suggest the basis of calculation used in relation to the prices offered. Notwithstanding this, a very noticeable regard is paid, and a duly democratic recognition appropriate to these times is yielded, to the Standard Method of Measurement. The orbits of the two comets are coming closer.

The recognition of the S.M.M. can be marked by these few examples chosen out of many: (i) The W.D. Schedule has introduced prices for underpinning into *Excavator*, and it is noticeable that the method of measurement complies with the Standard Method, including the same working space clearances. (ii) Brickwork, formerly given in the Schedule at per foot super reduced to 1½ bricks thick, is now given per yard super reduced to one brick thick, following the recent S.M.M. amendment. (iii) The trade formerly entitled *Slater, Tiler and Slate Mason* now adopts the S.M.M. title of *Roofer* (with the slate mason section transferred to *Mason*). (iv) In *Plumber*, the lead allowances to be made for drips, rolls, etc., in sheet work are brought in to conform exactly with the S.M.M.; the list is, in fact, a verbatim transcript from the S.M.M. (except that there is a misprint in the W.D. Schedule of *ridges and pipes* for *ridges and hips*), and the remainder of the classifications for sheet lead work are substantially transcribed from the same source. (v) Painting on metal windows, formerly given in dozens of sash squares, now becomes per yard super, overall, in the same classifications as the S.M.M., with internal and external work separately stated.

Having accepted the Standard Method so far, the question must be posed: "Why not have gone that little further?" for there yet remain several instances of disparity, some of which it would seem unnecessary to have discriminated about, since they can only prove an irritation in practice; such items, for instance, as bends in pipes. Whereas the S.M.M. has ruled that bends in lead pipes shall be measurable in all diameters from 1¼ in. upwards, the W.D. Schedule remains "as you were" at 1¼ in. upwards; and whereas with iron pipes the S.M.M. directs that only diameters ¾ in. and under are now to be measured inclusive of elbows, bends, etc., the W.D. Schedule has not yielded beyond to the 1¼ in. size (which was the old S.M.M. upper limit for this class of pipe). Other divergences are perhaps not so important; some are relevant to the fact that the W.D. Schedule is (or was) essentially a "Trades" document, which explains why we find Iron Drains in *Plumber* instead of in *Drainlayer*, and Formwork in *Carpenter* instead of in *Concretor*. Less logically, Floor tiling remains in *Plasterer* and Granolithic paving in *Concretor*, although there is a trade heading of *Pavior*, which trade, however, remains doggedly External, wedded to *Roadmaker*, and will have no internal alliances.

The previous edition of the W.D. Schedule was in that year of pregnant memory, 1939. It may be thought that the many speculations which have been made regarding the increase in building prices since that date can now be given a useful basis of comparison. But it will be found a somewhat will-o'-the-wisp game, for, with a little prejudicious manipulation, the figure of increment can be shown to be anywhere between 75 and 125 per cent. Furthermore, there is no statement that the prices given in any edition of the W.D. Schedule are standard to any particular datum, and it can be shown that these 1948 prices are not necessarily stepped up uniformly from the previous edition. Revision of pricing data is particularly noticed—for example, in the deeper stages of excavating, where in the 1939 edition, *Excavate over areas in ordinary ground and throw out* was 1s. 9d. per yd. cube for the first 5 ft. deep, plus 3d. per yd. cube extra for each subsequent 5 ft. depth. The comparable figures in the 1948 edition are 2s. 10d. plus 1s. 11d.; that is to say, the lower depths were priced at 14 per cent. higher than the initial 5 ft. depth in 1939; they are now priced at 67 per cent. higher. Similarly, *Excavate trenches in ordinary ground not exceeding 4 ft. wide, including timbering* was 3s. 6d. per yd. cube for the first 5 ft. depth in 1939, increasing by 10d. per yard cube extra for subsequent 5 ft. depths. In the present edition the comparable prices *excluding timbering* are 3s. 9d., increasing by 3s. 3d. *Removal of spoil not exceeding 50 yards and depositing* has increased from 10d. to 2s. 4d. per yard cube, a rise of 180 per cent., whereas *Removal exceeding 100 yards, but not exceeding one-quarter mile and depositing* has increased only from 2s. to 3s. 4d., i.e., a rise of 66 per cent.

Among other notable changes that will interest the W.D.S. specialist are that the old familiar, the "star" price, has lost its mention, that the classifications for timbering to excavations are more explicit, and the awards should now be clear beyond doubt, and the significance of the amendment in title will be observed. Formerly it was *Schedule of Prices for Works and Repairs to Buildings, etc.*; now it is *Schedule of Prices for Works Services*. The former Clause 8 of General Regulations, Application of Prices, which particularised to some extent on the applicability of the Schedule to works of repair and maintenance, is withdrawn. The pages have increased from 301 in the 1939 edition to 442, and the item numbers from 3,974 to 5,784, with a very considerable increase in columnation. Much of the increase in bulk is devoted to materials

* The War Department Schedule of Prices for Works Services. H.M.S.O. (On sale to the public at 25s.)

now in general use which have been introduced into building practice since the war, such as asbestos cement products. This is therefore much more than just a new edition; without question it is a very important work in the quantity surveying field and a prodigious mine of information. It merits, and will certainly achieve, a much wider sphere of employment than its limited title prescribes. The W.D.S. specialist has always been looked upon as something of a man apart among surveyors; he will not lose his honours, nor can he now rest upon his laurels.

PENSION SCHEME FOR BUILDERS

THE Council of the National Federation of Building Trades Employers have received and adopted the recommendations contained in a report from the Trustees of the National Federation's Staff Pension Fund. In their report the Trustees recommend that the Federation should bring to the notice of its members the need for all employers adequately to provide for the superannuation of their regular employees.

The Staff Pension Fund affords to all building firms in membership with the N.F.B.T.E. a simple means of doing this. It is a special feature of the scheme that the same benefits are available at the same rates to building firms whatever their size. A building firm which wishes to provide these pension benefits for its staff enters into Supplemental Deeds of Trust with Trustees appointed by the N.F.B.T.E. and thus becomes a "Contributing Employer." All the permanent employees of a "Contributing Employer" are eligible to become members of the Staff Pension Fund. The scheme, which is on a contributory basis, with a fixed weekly payment being made by the employee and a contribution being added by the "Contributing Employer," enables building firms to provide the following benefits:—

(a) Pensions (payable at 65 for men and 60 for women) varying in amount according to the employee's length of service and salary class. An employer may arrange for additional pensions to cover the past service of his staff.

(b) Life Assurance of approximately one year's salary payable on the death of an employee during service.

(c) Total and Permanent Disablement Benefit for male employees incapacitated during service.

The Trustees have secured these benefits by policies of insurance.

Despite the difficulties of post-war reconstruction, the Fund has grown steadily since its formation in 1942 as more building firms have come to appreciate the advantages of providing for the superannuation of their staffs by a scheme of this sort. One special advantage of the scheme is that a change of employment between Contributing Employers entails no loss of benefits.

Full particulars about the Fund are available from the Secretary to the Trustees of the Staff Pension Fund of the National Federation of Building Trades Employers, 82, New Cavendish-street, London, W.1.

R.I.B.A. New Schools' Exhibition.

A HALF-SCALE reproduction of the recent R.I.B.A. New Schools Exhibition is now on view at the Building Centre, 9, Conduit-street, W., until January 14 (10 a.m. to 5 p.m., Saturday 10 a.m. to 1 p.m.).

OBITUARY

T. D. Atkinson, F.R.I.B.A.

WE regret to record the death, at the age of 88, of Mr. Thomas Dinham Atkinson, F.R.I.B.A., Surveyor to the Dean and Chapter of Winchester and to the Warden and Fellows of Winchester College, and Diocesan Surveyor, Winchester.

Born in 1864, Mr. Atkinson was educated at Rossall and at University College, London. Articled to Sir Arthur Blomfield, A.R.A., he continued his architectural training at University College architectural school and at the British School at Athens. Though he built the University Library and Observatory at Cambridge, Atkinson's interests soon declared themselves as being in the ecclesiastical field, and before going to Winchester he had been surveyor to the Dean and Chapter of Ely, where he carried out a good deal of reconstructive work. His other architectural work included a church at Maes-y-Groes, N. Wales; some houses; and church work at Cambridge, Winchester and elsewhere. He was elected A.R.I.B.A. in 1889, and Fellow 21 years later.

Atkinson was a recognised authority on ecclesiastical architecture, and primarily through his writings exercised much influence. His publications included: "Old Cambridge Plate" (joint author), 1895; "Cambridge described and illustrated," 1897; "English Architecture" 1904 (11 editions); "Excavations at Phylakopi, Melos" (section on the Architecture) 1904; "Glossary of English Architecture" 1906 (5th Ed. 1937); "English and Welsh Cathedrals" 1912; and a "Survey of the Street Architecture of Winchester."

His latest work appeared only last year, "Local Style in English Architecture," which; while containing much interesting information and comparisons on church details, was perhaps misnamed in so far as it deals almost exclusively with ecclesiastical buildings. Atkinson was hon. secretary to the Cambridge Antiquarian Society, and had deep interests as antiquary and archæologist.

BALLAST AND SAND INDUSTRY

WAGES AGREEMENT

AT a meeting of the National Joint Council for the Ballast and Sand Industry held on December 10, 1948, the following decisions were made:—

Immediately after the pay-day in week ending December 18, 1948, the basic rates of wages shall be increased by 1½d. per hour, and the wage rates for "C" class licence drivers in the industry shall be similarly increased by 1½d. per hour.

Immediately after the pay-day in week ending December 18, 1948, the rates of payment to watchmen shall be increased by 1s. per shift.

Those employers already operating a higher basic wage in accordance with Clause 7 (7) of the Wages Agreement, may be exempted from such portion of the present increase as is already in operation.

An extra day's holiday with pay at ordinary time rates shall operate. Unless otherwise agreed locally, the day selected will be Good Friday in England, and in Scotland a day to be mutually agreed between employer and employee.

All time work on Sunday, whether for maintenance, repairs, or excavation work for production, shall be paid at double time rates.

Welders shall be included in the Schedule of Differentials at the following rates:—

Welder (skilled), plus 7d. per hour; welder (semi-skilled), plus 4½d. per hour; welder's mate, plus 2d. per hour; Welder's apprentices, boys and youths under 21 years to be paid in accordance with the rate set out in Clause 7 (2) of the Wages Agreement, but the differential for a semi-skilled welder to be added to the basic rate before calculating the actual rate in accordance with Clause 7 (2) during any period when acting as assistant to a welder.

Further details of these decisions can be obtained on application to the Employers' Secretary, National Joint Council for the Ballast and Sand Industry, 48, Park-street, W.1.

HOUSING PROGRESS

FIGURES FOR NOVEMBER

THE Housing Progress Summary presented to Parliament as a White Paper jointly by the Minister of Health and the Secretary of State for Scotland shows that the number of permanent houses completed in Great Britain during November was 18,866, compared with 19,741 in October. The number of permanent houses completed during the present year is now 208,295 made up as follows:— January, 15,401; February, 16,134; March, 20,357; April, 19,171; May 20,372; June, 21,159; July, 19,838; August, 16,854; September, 20,402; October, 19,741; November, 18,866.

The number of temporary houses finished in November was 375 (compared with 494 in October). There now remain 279 temporary houses to be completed out of the total programme of 157,270. The number of houses (permanent and temporary) completed in November was, therefore, 19,241 compared with 20,235 in October. The total number of houses completed is 563,359 (406,368 permanent and 156,991 temporary).

During November homes were provided by new building, repair of uninhabitable houses, conversion and requisitioning for 21,136 families, compared with 22,719 in October, and 24,448 in September. This brings the total number of families rehoused by these methods under the post-war programme to 842,570. Excluding requisitioned houses, the number of additional homes provided is 812,406.

FUTURE OF THE BUILDING INDUSTRY

ACCORDING to the political correspondent of *The Sunday Times*, the Labour Party will include in its election programme to be circulated to constituent parties in March—for their consideration before the Party conference at Whitsun—a proposal "to apply a substantial measure of nationalisation to the building industry."

No doubt this subject has been accorded consideration by the party's planners, for successive building operatives' conferences since the war have passed resolutions urging that the industry be nationalised. Mr. Morgan Phillips, Secretary of the Labour Party, informs us, however, that so far no decisions regarding the Party's election programme have yet been made. "No statement for circulation to constituencies is required until March," he says, "and it is unlikely that we should rush into decisions of this sort at the present stage."

In reply to a question, Mr. Morgan Phillips added that so far no direct discussions on the subject had been held between the operatives' unions and the Labour Party.

BUILDING DRAINAGE

NEED FOR RELIABILITY AND UNIFORMITY IN DESIGN

CURRENT problems in relation to building drainage in the post-war housing programme were described by MR. F. L. BARROW, M.Sc., A.M.I.C.E., M.I.Struct.E., F.R.San.I., of the Building Research Station, D.S.I.R., in a paper* on "Building Drainage" read before a sessional meeting of the Institution of Sanitary Engineers at Caxton Hall, London, on December 7.

Mr. Barrow began by saying that in the course of the many talks he had had about plumbing and drainage matters with a large number of sanitary engineers, sanitary inspectors, plumbers, manufacturers, architects and others, one outstanding fact had emerged. This was that there were substantial differences of opinion over the whole range of plumbing and drainage. Many of those differences could not be accounted for by the fact that practice must necessarily vary according to different conditions on different jobs. It went much deeper than that. It meant that no one man, however wide and lengthy his experience might be, could be accepted as final authority on every point. Two very knowledgeable men of equal breadth of experience might, therefore, differ on quite important issues.

Following is a summary of the speaker's subsequent remarks:—

It is because I think we should now do something more than simply go on arguing about the various problems which arise in building drainage that, at the end of this paper, I am going to make a suggestion as to something practical which might be done, and if your Institution should think anything of my suggestion and feel disposed to take a hand in it I should be more than delighted. I must digress a little, however, by putting before you some example of the kind of differences to which I haye referred. In this way the general problem may be more clearly defined.

Pipe Sizes.

While some people seem to base calculations for pipe sizing of branch drains and private sewers on self-cleansing flow, others recognise that no drainage system so close to buildings, at any rate houses, can be continuously carrying discharges in all parts of it and thus there must be periodic deposition of solids. Hence, the pipes cannot really be self-cleansing in the strict sense of the word and all one can hope to do (all perhaps that one needs to do) is to prevent actual blockages.

Blockages are often caused, apparently, by solid objects which should not properly be in the drain at all, such as cleaning brushes, cloths, children's toys, and other (stranger) articles. If this is true it seems rather essential to base pipe sizing on a successive increase in diameter in the series: w.c. outgo, branch drain, private sewer. The first of these seems to control the sizing very largely. When the outgo is 3½ in. diameter the branch becomes 4 in., and then if the private sewer is made 6 in. it helps towards confining blockages to the branch drains.

When pipe sizing is done on this basis it does not seem necessary to worry very much about fluid flow capacity because in the normal case the sizes are more than ample to take the liquid discharges.

It seems appropriate in this connection to refer to American domestic drainage practice where, because of the use of syphonic closets with 2½ in. to 2½ in. outgoes, there is a case for 3 in. diameter branch drains; and some American engineers think a minimum of 3 in. is correct for their practice. A point in using a small outgo is that it tends to localise blockages in the closet pan, which, from the sanitary engineer's point of view, would seem to be rather a good thing.

Five inch drains are used in Scottish and also in American practice, but in England it seems usual to jump from 4 in. to 6 in.

The idea was once given to me that a domestic drain should be of ample size in view of the possibility that at some future date more connections may be made to it. Is this a justification for permitting relatively sluggish discharges until such times as the additional connections are made?

Gradients.

The foregoing remarks about self-cleansing flow in relation to pipe sizes would seem to apply also in connection with gradients. In Scotland it seems normal to accept the gradients of 1 in 48 for 4 in. and 1 in 72 for 6 in. pipes. In America I found people recommending a variety of gradients from 1 in 48 to 1 in 100 for 4 in. and 6 in. pipes.

I think it is over-simplifying the problem of minimum gradients in domestic drains to relate them solely to size of pipe. The proper clearance of such drains is also affected by the initial velocity of the discharges, their amount and the type of solids carried. Because of these factors, the conditions of flow are not the same in different parts of the system, initial velocity, for example, having much more effect near the houses.

It seems important that it should be determined with rather more certainty than has been done so far just how small the gradients can be made without adversely affecting clearance, because obviously if they are made steeper than necessary a lot of money may be wasted in excavation, the cost of which goes up rapidly with increased depth of trenches.

When stoppages occur in drains which happen to have an unusually small gradient it should be established, I think, that these stoppages really *are* due to insufficient gradient (and not, for example, to bad joints) before attributing the trouble to not abiding by the time honoured rules of 1 in 40 and 1 in 60.

Concrete Support of Pipes.

One trouble about concrete support, it appears, is that the fundamental causes of the cracking of pipes and joints apply also to the concrete, so to be logical one should ensure that the concrete can bridge over the parts where support is going to be lost by settlement. This may call for reinforcement.

Another question is whether we are not setting ourselves an impossible task in trying to lay impervious drains (if that is what is really wanted) with brittle materials such as stoneware pipes, with cement joints, in ground that must often, of necessity, undergo some movement after the drain is laid, particularly close to the buildings. And if this is so, should not further efforts be made to introduce more flexible materials? The Domestic Drainage report* says:

"The development of plastics during the war period raises the question whether some of the new materials of this type might not be applied with advantage to the manufacture of drain pipes and fittings. Some of the materials have the advantage of high resistance to corrosion combined with toughness, lightness and a useful degree of flexibility."

Finally, in this section, a word on drainlaying is relevant because of the claims that concrete support can often be omitted if drains are well laid. I will merely say that opinion seems to be divided as to how far, and how often, first-class drainlaying can, in fact, be obtained in current practice.

Trapping and Ventilation.

"Trapping" and "Ventilation" are presented together for reasons which are explained (if any explanation is necessary) in the following quotation from the Domestic Drainage report:

"*Foul Water System.* In the typical example, the only traps are those on the appliances within the houses and at the gulleys. This permits a free flow of air from public sewer to the open tops of the soil stacks—except for the short runs of branch pipes from the trapped gulleys to their junctions with the soil branches.

"*Surface Water System.* In the example the rainwater gulleys on the surface water system are trapped, hence a through current of air-is not obtainable as in the case of the foul-water drains. The rainwater gulleys, however, cannot receive foul-water discharges (such as yard washings or kitchen waste) because the only connections to them are of the back inlet type, i.e., there is no surface inlet through a grating. The chief requirement, as regards ventilation, for the branch surface water drains, is the prevention of airlock during heavy rainfall. This is adequately met here by the open covers on the manholes."

Now we come to the hoary old subject of the Intercepting Trap. Some in this meeting will be able to recount much better than I the history of the controversy surrounding this question.

In Scotland intercepting traps seem to be favoured rather more than in England. In America, according to my limited information, they are usually omitted now in domestic drainage. No doubt it depends upon circumstances, but what needs to be decided more definitely by actual observation is, on the one hand, the incidence of noxious vapours in and around buildings because there is no intercepting trap and, on the other hand, the incidence of stoppages caused by the presence of an intercepting trap. Then it may be possible to get nearer to an answer to the question: When is the intercepting trap necessary?

Access.

Introducing the question of access to domestic drains the speaker again quoted from the Domestic Drainage report and suggested that one way to help everybody in the future to follow the most sensible practice—by which he meant practice which gave the minimum of trouble without waste of money—would be to study existing drainage systems in a systematic manner, and on a statistical basis, to note what access was really required for the stoppages which really occurred. Mr. Barrow concluded by saying he hoped that by his paper he had raised the question as to what could be done to infuse a little more reliability and beneficial uniformity into domestic drainage design, and made a plea for a common storehouse of observed facts to leaven exchanges of opinion. He did not think the job of work should consist

* Crown copyright reserved.

* POST-WAR BUILDING STUDIES, No. 26: "Domestic Drainage." London, 1947. (H.M.S.O., 6d. net.)

merely of assembling a lot of cases of domestic drainage troubles with probable reasons why they occurred. Besides that it was necessary to know whether a certain practice led to a certain trouble in every case, once in 100 cases, once in 10,000 cases or once in a million. If it caused trouble very infrequently it might be worth the risk, not only to save money, but also because precautions in domestic drainage introduced complications when carried beyond a certain limit. What was needed, he suggested, was systematic observation of the performance of the building drains in a large number of housing estates, or other housing groups, with proper sampling. In that way the relative importance of the various factors might become more correctly evaluated.

LAW REPORT

LIABILITY FOR REPAIRS

COURT OF APPEAL.
BEFORE LORDS JUSTICES BUCKNILL AND DENNING AND MR. JUSTICE JENKINS.

Rogers v. R. Rosenblatt and Sons, Ltd.

This was an appeal by the defendants, Messrs. Rosenblatt and Sons, Ltd., of Vale-road, Finsbury Park, London, from a judgment of Mr. Justice Byrne in favour of Mr. L. J. Rogers, of Church End Farm, Sherington, Bucks, on his claim to deduct from his rent the cost of certain repairs to his farm amounting to £166.

The case put forward by Mr. Rogers was that when he became tenant of the farm in 1932, it belonged to a Mr. Giles. The agreed rent was £200 a year and the plaintiff alleged that there was a verbal agreement that he should deduct from the rent the necessary cost of repairs to the farm house. The property in 1941 was purchased by the defendants, and in 1947 plaintiff carried out repairs costing £166, which amount he now claimed he was entitled to deduct from the rent due in September, 1947. The defendant threatened to levy a distress for the rent and plaintiff claimed an injunction to restrain the defendants doing this in view of the verbal agreement plaintiff had with Mr. Giles.

The defendants repudiated liability.

Mr. Justice Byrne found in favour of the plaintiff, accepting the evidence that the verbal tenancy agreement with Mr. Giles included the agreement of a rental of £200 a year, and the landlord to pay for all repairs.

It was from this judgment that the defendants now appealed and their submission was that the verbal agreement was void for uncertainty, and that the alleged covenant was not borne out by the evidence.

The Court, without calling on counsel for Mr. Rogers, dismissed the appeal.

Lord Justice Bucknill, in giving the judgment of the Court, said his opinion was that there was ample evidence to justify the finding which Mr. Justice Byrne arrived at. The only question was whether the agreement was too vague to be relied upon and was void for uncertainty. It was acted upon for nine years and there was no uncertainty about it. The agreement was a good one and was not void for uncertainty.

Fixed Holiday Week, Birmingham Area.

The Birmingham and District Local Joint Committee for the Building Industry have decided to repeat the arrangement made in 1948 for a fixed holiday week in July and have selected the working week Monday to Saturday, July 4-9 (inclusive), for this purpose.

SOLID FUEL IN THE HOME

PAPER READ AT ROYAL SOCIETY OF ARTS

AFTER giving a brief historical survey of domestic fuel, MRS. E. FRASER-STEPHENS, M.A., organising secretary of the Women's Advisory Council on Solid Fuel, who read a paper on "Solid Fuel in the Home" at a meeting of the Royal Society of Arts, on December 1, went on to discuss solid fuel appliances in relation to the effect on the design and functions of the appliances of the kind of solid fuel they were intended to burn. Following is a summary of her remarks:

I think it is generally agreed that the most efficient appliances of all are those which are designed for one specific fuel of a special size. The capacity of the firebox can be exactly calculated in relation to the heat output required, and the correct adjustment of the dampers is greatly simplified, while accurate thermostatic control depends on having fuel of consistent type and quality. The question of size of fuel comes in where there is an automatic stoking device, whether controlled by an electric thermostat or of the gravity-feed type. Automatic stoking is at present embodied in only a few of the more expensive domestic appliances, but in time it should become as usual for our domestic central heating and hot-water systems as it is in Canada and the United States. At present, however, while designing is going on in this direction, actual use of automatic stoking devices is held up by variations in the quality and size of the coal supply. This is only a temporary difficulty which the National Coal Board are tackling with vigour, and, as soon as proper grading of coal is established, I can foresee a great increase in the production of small domestic boilers for central heating.

The second type of appliance to which I want to refer is that designed to burn more than one kind of solid fuel. This, in some cases, results in a certain loss of efficiency compared with the specialised type. However, it allows not only for the present difficulty over fuel supply, which I mentioned earlier, but makes provision for those local variations which are likely always to occur and for the personal preferences of the consumer.

Heating and Hot Water.

The provision of back boilers for the domestic hot-water supply is an old idea, but is now being incorporated in many modern heating stoves. Under present conditions this system enables tenants of small houses to obtain both space heating and hot-water from the same fire, which economises fuel and money, but the time when hot water is needed and the times when the housewife is free to sit by the living room fire seldom coincide, and in summer it may be both wasteful and uncomfortable to heat the living room. I hope that in time these back boiler arrangements will be converted to central heating systems by linking the boiler to radiators, and by installing a separate hot-water system. In the meantime some modern heating stoves and continuous burning fires are already warming more than one room by means of convected hot air.

I must briefly deal with my final item, combined-fuel appliances which, as far as I know, are not used much in this country, although common enough abroad. The first type in this category is the appliance which will burn both solid fuel and another fuel. As far as I know, we have not yet seen in this country the type of cooker very familiar in France and Belgium, and also popular in Canada, which combines in the same unit facilities for solid fuel, or wood, with gas or electricity.

The second type is the cooker or domestic boiler which can be converted from one type of fuel to another. There has been a great development of these in the United States recently. These boilers consist of a basic unit with three different heating "packages," for coal, oil and gas. The coal package consists of grates, firebrick and a shaker for hand-firing. The gas package provides an automatically controlled gas burner, and the oil package an automatic oil burner. The customer orders whatever package he requires, and if he wishes to change later on can instal a different package in about three hours. Full instructions and tools are provided so this can be done by the householder without calling in a plumber.

I mention these foreign developments to show that the tendency abroad has been to cope with fuel uncertainties and variations of consumer taste by making solid fuel appliances more comprehensive and more adaptable, whereas in this country so far each fuel has developed along its own lines, partly, perhaps, for competitive reasons. It may be that in future we shall see more co-ordination between the fuels not only on the broad basis which is the concern of the Ministry's Scientific Advisory Committee but between manufacturers of domestic appliances. Electrically-controlled forced-draught appliances are well known in industry but rare in the domestic field. Yet this simple addition would eliminate the effect of variations in wind and weather and badly designed chimneys on solid fuel cookers and boilers. Modern solid fuel appliances already provide domestic comfort and convenience of a standard unknown to previous generations, at a far lower running cost than by any other method. What we may now look forward to is the development of every type, even the simplest and cheapest, in the direction already achieved by the best in this field, which are true scientific precision instruments for the art of good living.

BUILDING REGULATIONS HANDBOOK

The "Building Regulations Handbook," a guide and index to the Building (Safety, Health and Welfare) Regulations, 1948, and other legislation affecting building operations, has been published by the Royal Society for the Prevention of Accidents. The method followed in this book consists of tabulating in one place all the requirements affecting a particular subject. For instance, the new regulations contain numerous scattered references to the handling and stacking of materials on sites; in this book all these requirements are grouped together under a single heading. In the same way, all references to the provision of accommodation, washing facilities, etc., will be found in one place, whether they originate in the Building Regulations, the main Factories Acts or the Lead Paint Regulations. The book will be useful as an aid to the initial study of the new law and as a standard reference work to be used whenever building operations are being planned and executed. It has been strongly bound in cloth so as to withstand wear.

COLONIAL DEVELOPMENT

RECONSTRUCTION IN THE SOLOMONS AND ELSEWHERE

OWING to the Japanese occupation of the British Solomon Islands during the war and the campaign fought on its territory, the Protectorate has suffered very severely from the ravages of war, but as early as 1943, as each island was cleared of the enemy, the British administration assumed responsibility for the rehabilitation of the community. Reconstruction has been a difficult task in the Solomons (population 95,000) but the United Kingdom has given considerable assistance, including financial help in the form of grants under the Colonial Development and Welfare Acts, totalling over £118,000 since 1942. The schemes for which the British Government has allocated money include the Development of Medical Services which will involve the reconstruction of the central hospital destroyed during the war, district and rural hospitals and dispensaries, leprosy and tuberculosis treatment and the provision of sea-going medical transport vessels. An interim grant of £48,880 to cover one year's expenditure has been made. A sum of £19,200 has been granted for the purchase of six Bailey bridges to be erected for purposes of reconstruction and development; native dispensaries will be constructed (£1,140), and a native administration school established (£17,500).

A ten-year plan of reconstruction has already been drawn up and parts of it are in operation. The plan will cost approximately £1½ million and makes provision for administrative reconstruction, improved communications, new developments in agriculture and forestry and increased social services.

During the war there was widespread destruction of towns and villages, and one of the first needs was the provision of housing. The rebuilding of villages totally destroyed in battle areas has now been completed. Townships are still being rebuilt. The former capital, at Tulagi, was destroyed during the Japanese occupation and a new capital, with good harbour facilities, was established at Honiara, on Guadalcanal Island. The temporary hutments set up in 1945 are gradually being replaced by permanent government buildings.

Other Colonial Schemes.

The Government of Ceylon intends to undertake industrial research, publish the results of that research, establish pilot factories and provide whatever help is necessary for private capital to increase the nation's wealth. A six-year plan provides for financial provision in the current year totalling Rs. 15½ million for factory development. A large part of this will be spent on factories. It is expected that within six years the scheme's foreshadowed factories will be completed. On the basis of current prices, the production of these factories would effect a reduction in Ceylon's import programmes to the value of about Rs. 100 million.

Among the recent grants approved from the central research allocation provided under the Colonial Development and Welfare Act was one of £135,000, made in September to cover the cost of construction of a fisheries research station in Hong Kong. It is estimated that the station, together with the installation of equipment and the building of the necessary staff quarters, will take about two years to complete.

DEVELOPMENT IN RHODESIA

NEW £5 MILLION LOAN

On November 23 the Southern Rhodesian Government offered for subscription at par through the Bank of England a new loan for £5 million. The loan, supplemented by borrowing within Southern Rhodesia, is required for expenditure on various development projects approved by the Government of the Colony.

Projects on which the loan, together with other money, is to be spent include: £5,755,000 as further advances to statutory boards and commissions. Of this sum £2 million will be allocated to the National Building and Housing Board set up to overcome the acute housing shortage in the Colony. The sum will be used mainly to build 1,500 *pisé-de-terre* houses; £325,000 towards the extension of the Que Que Iron and Steel Works; £520,000 to be allocated to the Cotton Research and Industry Board towards the expansion of the Gatooma spinning mills.

The Electricity Supply Commission is to get £1½ million to finance the present development plan, which includes the building of a 40,000 kilowatt station near Que Que and the connecting up of other power stations throughout Southern Rhodesia. £1,204,000 will be allocated to communications and £1,170,000 is to be spent on irrigation, water and soil conservation projects. This latter sum includes £125,000 for the new Hunyani Poort Dam near Salisbury which, it is estimated, will cost £1 million.

A sum of £240,000 is required for the newly established Central Mechanical Equipment Department, for the purchase of motor vehicles, while £756,000 will be allocated to telecommunications for extending Government services by means of additional telegraph, telephone and radio equipment.

A total of £1,297,000 is allotted to buildings and equipment for health and educational purposes, and to loans for local authorities for housing.

Calendars, 1949.

We acknowledge with thanks calendars for 1949 from the following:—Frederick Parker, Ltd.; the *South London Advertiser*; Mr. R. K. Burt; Messrs. Dunlop and Ranken, Ltd.; Oldacres and Co., Ltd.; Harrison and Co. (Builders' Merchants), Ltd.; C. Ryan and Company; and L. E. Nunn, Ltd. Also a diary from The St. John's Timber Co., Ltd.

Joint Directorship Discontinued.

Sir Harold Bellman, D.L., J.P., LL.D., hitherto joint managing director of the Abbey National Building Society, has retired, but will still be chairman of the Society's board of management. Mr. R. Bruce Wycherley, M.C., F.C.I.S., formerly joint managing director, will be sole managing director.

D.S.I.R. Publication.

The Department of Scientific and Industrial Research have issued "Road Note No. 5—Types of Road Surfacing and Maintenance using Tar or Asphaltic Bitumens" (H.M.S.O., price 1s., by post 1s. 2d.). It enumerates the types of bituminous road construction in common use and those still under development. The purpose and technical merits of each are briefly discussed and, where possible, attention is drawn to the relative advantages of using road tar or asphaltic bitumen as the binding medium.

ALUMINIUM ROOF TILES

A RECENT DEVELOPMENT

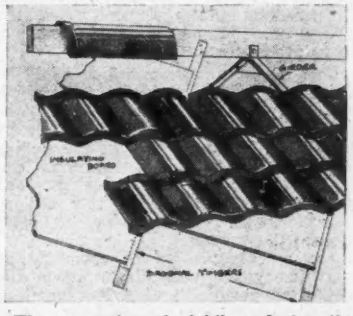
A NEW and unorthodox type of roof structure is the subject of a provisional patent recently taken out by Mr. Norman A. Wilson, who writes:—

I had in mind, recently, building a bungalow for myself which I designed to suit the prevailing conditions of shortage, chiefly in timber and bricks, and making use of the more readily available materials. The design for the roof for the bungalow seems to me to have possibilities well worth the builder's consideration, particularly in these days of costly labour, as this roof is quickly erected, is of pleasing appearance and is light in weight, so reducing structural costs.

The roofing itself is of aluminium of a thickness perhaps 10 or 8 s.w.g., which should give good insulating properties. Aluminium does not corrode as readily as most people believe, especially in its pure state, as is shown by the statue of Eros in Piccadilly Circus, which is an aluminium casting. In this case, it has been found that the sulphurous atmosphere of London did not harm it and did, in fact, produce an aluminium oxide coating which preserved the metal.

This same aluminium oxide film can be artificially produced by electrolytic action, generally known as anodising, or by simple immersion in acid solutions of different kinds, producing varying colours such as black, blue, grey, brown, etc., or, in the case of anodic film, this can be dyed to almost any colour one wishes to harmonise with the wall treatment or the surrounding countryside.

It is well known that metals of dissimilar electrical potential, when brought into contact, set up a galvanic action to a small degree which, with the passage of time, tends to corrode one or both. In the case of the roof I am suggesting, the aluminium roofing or tiles are supported by an orthodox steel girder-type structure, but the tiles are laid on to wooden diagonal joists and ridge boards so that there is no contact between the iron girders and the aluminium tiles. The timber could be covered with insulating board prior to laying the tiles, if required.



The strength and rigidity of the tiles are to be found in the corrugated and flanged shape. When correctly laid the tiles fit snugly together. Fixing is simple as there is only one nail holding each six or seven feet of tile in position; the tiles (as will be seen from the drawing) support each other and leave very little gap through which draughts could get in or warmth escape.

British Standards Supplement.

A provisional supplement to B.S.881 and B.S.589, "Nomenclature of Commercial Timbers," may be obtained from the B.S.I., 24, Victoria-street, S.W.1, price 2s., post free.

RESEARCH IN INDUSTRY

A D.S.I.R. PUBLICATION

SINCE the end of the war leaders in industry, in science and in the Government have stated emphatically that the use of research in industry is essential for the survival of this country. Examples from a wide variety of industries are given in "Research in Industry," published for the D.S.I.R. and the Board of Trade by H.M.S.O. price 1s. 6d., by post 1s. 8d. This book contains nineteen articles recently published in the *Board of Trade Journal*, each written by an expert in the industry or subject concerned. It is pointed out that the articles should not be regarded as containing statements of Government policy.

The articles cover a variety of industries, i.e. cotton, wool, rayon, glass, pottery, iron and steel, lace, linen, boots and shoes, paint, furniture, plastics, light engineering and electrical consumer goods. In addition there are articles on electronics, machine tools, industrial design and radar. In each case the emphasis is laid on the value of research for the future, but examples of what research has already done for the industry are also given.

A more spectacular example of the impact of science on industry has been the steady replacement in the potteries of the old type of coal-fired bottle oven by the modern tunnel oven. The advantages of this are that the labour involved in firing ware is reduced, the work is made more pleasant, the firing cost is lowered, the quality of the actual ware is improved, and the thermal efficiency of the oven is increased. The kilns are fired by smokeless fuel.

The article on electronics gives some details of what these devices are able to do for manufacturers. They can control machine tools, detect internal flaws and faults in metals, match colours, count and inspect finished products for size, surface finish and weight. Almost any property of a product can be measured. There is wide scope for these devices in the protection of the worker from guillotines, presses, millers and so on. The application of electronics to industry is extensive.

One of the industries which might be described as the child of research is plastics. Some of the uses of the silicones are described in an article by Mr. N. J. L. Megson. In the baking industry, for example, silicones can replace fat for greasing baking tins. Ten years ago silicones were regarded as laboratory curiosities having no commercial possibilities.

The potentialities of research applied to industry are well illustrated in the section on machine tools. Investigations carried out recently on drilling showed that the overall economic efficiency can be greatly increased by applying the results obtained. Moreover, investigations showed that a few hundred pounds spent on this type of small tool research will save as many thousands of pounds each year in a single factory if properly applied.

The necessity of following up research results at once is stressed in a foreword by Sir E. Appleton. As an example, he mentions the publication of a report on the fire proofing of fabrics for which the Stationery Office received a considerable number of orders from the U.S.A. within a few days of publication.

CODE OF PRACTICE

HOT WATER SUPPLY FOR SCHOOLS

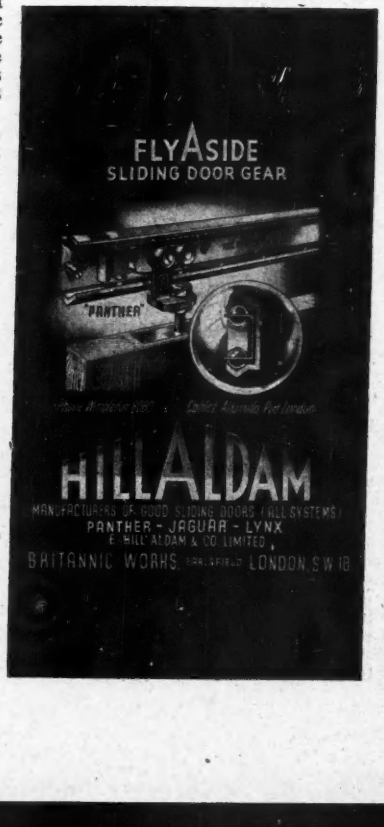
The Codes of Practice Committee has published, in final form, Code 332.202, "Domestic Hot Water Supply by Gas (Schools)." This code was prepared by a committee convened by the Institution of Gas Engineers. It deals with systems of heating water for domestic use in schools, by means of gas appliances, including auxiliary heating for clothes-drying when the central heating is not in use. Neither cold water supply and storage nor central heating is discussed in the code. A list of relevant British Standards is included.

Hot water is required at varying demand rates for many domestic purposes in schools; these points influence the selection of suitable installations, to which careful consideration has been given in the design section of the code describing the systems available, their selection, and the types of appliance suitable for specified duties. There is also information on the temperatures generally accepted for particular purposes, and the provision of alternative heating by gas in central heating systems using solid fuel. The code points out the desirability of temperature and time controls.

In the section, "Installation considerations which affect design," recommendations are given on a number of points, including gas supply, nature of water supply, cold water supply arrangements, length of non-circulatory draw-off pipes, insulation, venting, etc.

The efficiency of a water-heating system depends very much on the manner in which it is installed and the code makes extensive recommendations on the installation of the principal types of heaters. The "Work on Site" section contains advice on bending, cutting and jointing, fixing and supporting pipes; and on provision for expansion and contraction and protection from damage.

Copies may be obtained from the B.S.I., 24-28, Victoria-street, S.W.1, price 5s., reference CP.332.202 (1948).



HOUSING ON THE NORTH-EAST COAST

TALK AT HOUSING CENTRE

DURING his talk to the Housing Centre on December 14, MR. P. W. MACFARLANE, M.T.P.I., F.R.I.C.S., outlined the housing problems connected with the planning of the north-east coast area, proposals for which he and Sir George Pepler have recently submitted to the Minister of Town and Country Planning.

The housing problem in this area, he said, had two main facets. One was the problem of dealing with the great conurbations such as Tyneside, Tees-side and Sunderland. Most of the housing in the area had been built at an incredible speed in the latter half of the nineteenth century without regard to sanitary conditions or amenity. Most of it was quite substantial building. According to the 1936 housing survey the region had the worst housing record possible. It contained the two counties, and the six worst county boroughs for overcrowding, and six out of the seven worst boroughs and urban districts in the country. Housing conditions there were tragic, not only in the overcrowding of people in houses but in the overcrowding of houses on sites. But the rural district council of Easington led the returns for housing in the rural districts. It was almost urban and had a population of 80,000.

There was little prospect of new towns being created. The area was almost entirely tied to the heavy industries of coal-mining, shipbuilding and iron and steel manufacture. The conclusion which he and Sir George had formed, said Mr. Macfarlane, was that housing would have to take some form of peripheral development or be of the dormitory type. It was possible to develop in depth without going a great way from the people's work. It would not be possible to introduce new industries in order to form new towns in the ordinary sense of the term.

The other alternative would be to build high-density blocks of flats but he did not think the conditions would be propitious for that type of housing. The blocks would have to be so widely spaced that the advantage of space saved by building vertically would be lost, at least on Tyneside.

Another facet of the problem was housing on the coalfields. There was practically no land free from minerals. Practically all the ore obtained from the Cleveland area was worked out and most of that used in the Tees-side iron industries was imported. Mr. Macfarlane thought there was very little likelihood of being able to replace the coal and iron-ore mining industries by other industries. Migration from the area would have to be encouraged, but the population could not be encouraged to go to the already overcrowded Tyneside area. The recent Midlands area report showed that there was room for thousands of new workers there. In recent years many light industries had been introduced in parts of the North-East area and were employing women for whom there had previously been only casual employment. He felt that the industries which predominated in the area were bound to continue if the nation as a whole was to be prosperous and export enough goods to pay for our imports of food. The talk about the diversification of industry in areas like the north-east was rather overdone. It would be necessary to import a huge new population into such areas in order to break down the domination of the heavy industries already settled there.

RATES OF WAGES IN THE BUILDING TRADE [AS FROM JULY 11, 1948]

(Every endeavour is made to ensure accuracy, but we cannot be responsible for errors)

KEY TO SCHEDULE OF GRADE RATES.

Grade Classification,	A	A1	A2	A3
Craftsmen	2/9½	2/9	2/8½	2/8
Labourers	2/3	2/2½	2/2	2/1¾

Town.	Grade.
Aberavon	A
Aberdare	A
Abergavenny	A
Abingdon	A2
Accrington	A
Addlestone	A
Aldeburgh	A3
Aldershot District	A2
Alfreton U.D.	A
Alnwick	A1
Altrincham	A
Amble	A1
Amersham	A1
Ammanford	A
Andover	A2
Ardingly	A2
Arundel	A2
Ascot	A2
Ashby-de-la-Zouch U.D.	A
Ashby Woulds U.D.	A
Ashford (Kent)	A2
Ashford (Middlesex)	A
Ashington	A
Ashtead	A
Ashton-under-Lyne	A
Aspatria and Brayton	A2
Atherstone (parts of)	A1
Aylesbury	A2
Aylesby (Yorks)	A
Aylesham	A3
Bagshot	A2
Bakewell U.D.	A2
Banbury	A2
Barnard Castle U.D.	A1
Barnoldswick U.D.	A1
Barnsley	A
Barrow-in-Furness	A
Barrow-upon-Soar R.D. (exc. Thrussington A2)	A
Barry	A
Basford R.D. (exc. Willoughby-on-the-Wolds A2)	A
Basingstoke	A2
Bath	A
Batley	A
Baxterley	A1
Beaconsfield & District	A1
Beamish	A
Bearl	A
Bearpark	A
Beccles	A3
Bedale R.D.	A
Bedford	A
Bedlington	A
Bedwas	A
Beeston & Stapleford U.D.	A
Belper U.D.	A
Belton	A
Berkhamsted	A1
Berrington	A1
Berwick District	A1
Beverley	A
Bexhill-on-Sea	A2
Biggleswade	A2
Billericay	A1
Billing	A
Billingham U.D.	A
Bilsthorpe	A
Birchington	A2
Birkenhead	*
Birmingham C.B.	†A
Bishop Auckland	A
Bishop's Stortford	A1
Bispham	A
Blackburn	A
Blackpool	A
Blackwell R.D.	A
Blaydon U. D.	A
Blidworth	A
Blyth	A
Bognor Regis	A2
Boldon U.D.	A
Bolsover U.D.	A
Bolton	A
Bourne End	A1
Bournemouth District	A1
Bracknell	A2
Bradford	A
Bradford-on-Avon	A2
Braintree	A2
Breconshire, County of	‡A3
Brent Knoll	A2
Brentwood	A
Bridlington	A
Brierfield	A
Brighouse	A
Brighton	A1
Bristol	A
Broadstairs	A2
Bromsgrove U.D.	A
Brough	A
Broughton (Cheshire)	A
Buckley	A
Bungay	A3
Burnham-on-Crouch	A3
Burnley	A
Burton-on-Trent C.B.	A
Bury	A
Bury St. Edmunds	A3
Buxton	A1
Byfleet	A1
Calder Valley	A
Cambridge	A
Cannock U.D.	A
Canterbury	A2
Cardiff	A
Cardiganshire, County of	‡A3
Carlisle	A
Carmarthenshire, Cnty.of	‡A3
Carnarvonshire, Cnty of	‡A3
Carnforth	A
Castleford	A
Caterham	A
Chapel-en-le-Frith	A1
Charmy Down	A
Chatham & District	A1
Cheadle (Staffs) R.D.	A
Chelmsford	A
Cheltenham	A1
Chepstow	A1
Chertsey	A
Chester	A
Chesterfield M.B.	A
Chesterfield R.D.	A
Chester-le-Street U.D.	A
Chichester	A2
Chippenham (inc. Chippenham Within and Hardenhuish)	A2
Chorley	A
Clacton	A1
Cleethorpes	A
Clevedon	A1
Cleveleys	A
Clitheroe	A
Coalville U.D.	A
Cobham (Surrey)	A
Colchester	A
Colne	A
Colwyn Bay	A1
Congleton	A1
Consett	A
Conway	A1
Cornwall, County of	‡A2
Coventry C.B.	A
Cranbrook	A2
Cranleigh	A2
Crawley (Sussex)	A2
Crewe	A
Cromer	A1
Crowborough	A2
Cuckfield	A2
Dalton-in-Furness	A
Darlington District	A
Darwen	A
Deal	A2
Denbigh Town	A2
Derby C.B.	A
Devizes	A2
Devon, County of	‡A2
Dewsbury	A
Didcot	A2
Diss	A3
Doncaster C.B.	A
Dorking	A1
Dorset, County of (excepting Poole and Wimborne A1)	A2
Dover	A2
Dovercourt	A1
Driffield U.D.	A1
Droitwich M.B.	A1
Dudley M.B.	A
Dunstable	A
Durham City	A
Eastbourne	A1
E. Glam. & Mon. Val.	A
East Grinstead District	A2
Eastwood (Notts.) U.D.	A
Ebbw Vale & District	A
Edenbridge	A2
Ely	A3
Epping	A
Exeter	A1
Fakenham	A3
Falmouth	A2
Fareham	A
Faversham	A2
Felixstowe	A1
Filey U.D.	A1
Fleetwood	A
Flint	A
Folkestone	A2
Frinton	A1
Frome	A1
Gainsborough R.D. (Mid. pt.)	A2
Gateshead	A
Gillingham (Kent)	A1
Glossop	A
Gloucester	A1
Gloucestershire, Cnty. of	‡A2
Godalming	A2
Goole M.B.	A
Gosport	A
Grantham M.B.	A1
Gravesend	A
Great Yarmouth	A1
Grimsby (Yorks.)	A
Grimsby R.D. (Lincs.)	A3
Guildford District	A2
Guilsborough	A1
Guiseley	A
Halesowen M.B.	A
Halifax	A
Halstead	A2
Haresfield	A1
Harlow	A1
Harpenden	A1
Harrogate	A
Hartlepool	A
Harwich	A1
Haslemere	A2
Hastings	A2
Hatfield (Herts.)	A
Haywards Heath	A2
Hemel Hempstead	A1
Henley-on-Thames	A2
Hereford	A2
Herefordshire, Cnty. of	‡A2
Herne Bay	A2
Hertford	A
Hexham U.D.	A
Heysham	A
High Wycombe	A1
Highworth	A2
Hinckley U.D.	A
Hitchin	A1
Hoddesdon	A
Horley	A2
Horsham	A2
Horwich	A
Huddersfield	A
Hull	A
Hunstanton	A2
Huntingdon (Staffs)	A
Ilkley	A
Ingatestone	A1
Ipswich	A
Isle of Sheppey	A2
Isle of Thanet	A2
Isle of Wight	A3
Jarrow M.B.	A
Keighley	A
Kendal	A
Kenilworth U.D.	A
Kettering M.B.	A
Keynsham	A
Kidderminster M.B.	A
King's Lynn	A2
Kingskerswell	A1
Kingsteignton	A1
Kirkham	A
Knaresborough U.D.	A
Knowle	A1
Lancaster	A
Leamington M.B.	A
Leatherhead	A
Leeds	A
Leicester C.B.	A
Leighton Buzzard	A2
Letchworth	A1
Lewes	A2
Lichfield M.B.	A1
Lincoln C.B.	A
Littlehampton	A2
Liverpool	*
Llandudno	A1
Llanelly	A
London	*
Long Eaton	A
Loughborough M.B.	A
Louth M.B.	A2
Lowestoft	A1
Loxton	A2
Luton	A
Lyneham (Devon)	A1
Macclesfield	A1
Maidenhead	A1
Maidstone	A1
Maltby	A
Maldon (Essex)	A2
Malvern U.D.	A2
Manchester	A
Manningtree	A1
Mansfield M.B.	A
March	A2
Margate	A2
Market Harborough	A1
Maryport	A
Matlock U.D.	A1
Melksham	A2
Melton Constable	A3
Melton Mowbray U.D.	A2
Merthyr	A
Middlesbrough	A
Middleton	A
Middlewich	A1
Milford Haven	A2
Morecambe	A
Morley	A
Mundesley	A2
Nantwich	A1
Nelson	A
Newark-on-Trent R.D.	A1
Newbury	A2
Newcastle-on-Tyne	A
Newcastle-under-Lyme	A
New Forest District	A2
Newmarket	A2
Newport, Mon.	A
Newport Pagnell	A2
Newton Abbot	A1
Northallerton Dist.	A
Northampton C.B.	A
North Shields	A
Norton Radstock	A1
Norwich	A
Nottingham C.B.	A
Nuneaton M.B.	A
Oakham U.D.	A2
Oldham	A
Ongar	A
Ormskirk	A
Ossett and Horbury	A
Oxford	A
Oxted	A1
Paignton	A1
Peterborough	A
,, Soke	A1
Pickering	A3
Plymouth	A
Pontefract	A
Pontypridd District	A
Portishead	A
Portland Stoneyards	A
Portsmouth	A
Port Talbot	A
Preston	A
Pudsey	A
Pulborough	A2
Radnorshire, County of	‡A3
Ramsgate	A2
Rayleigh	A1
Reading	A
Redcar B.	A
Redditch U.D.	A
Redhill and Reigate	A
Ripon	A3
Rochdale	A
Rochester	A1
Rotherham	A
Rugby M.B.	A
Saffron Walden	A2
St. Albans	A
St. Helens	A
St. Neots	A2
Salisbury City	A2
Salisbury Plain	A2
Sawbridgeworth	A1
Saxmundham	A3
Scarborough	A
Scunthorpe	A
Selby	A
Sevenoaks	A1
Sheerness	A2
Sheffield	A
Shipley	A
Shoeburyness	A
Shoreham	A1
Shrewsbury M.B.	A
Sittingbourne	A2
Skegness U.D.	A1
Skipton U.D.	A1
Sleaford U.D.	A3
Slough	A1
Smethwick C.B.	†A
Snettisham	A2
Somerset, County of	‡A2
Southampton	A
Southend-on-Sea Dist.	A
Southport	A
South Shields C.B.	A
Spalding U.D.	A2
Stafford M.B.	A
Staines	A
Stamford M.B.	A1
Stantonwick	A
Stevenage	A1
Stockport	A
Stockton R.D.	A
Stockton-on-Tees	A
Stoke-on-Trent C.B.	A
Stoke Orchard	A1
Stourbridge M.B.	A
Stourport U.D.	A
Stowmarket	A3
Stratford-on-Avon M.B.	A1
Sunderland District	A
Sunningdale	A
Sutton Coldfield M.B.	A
Swaffham	A3
Swanage	A2
Swansea	A
Swindon	A2
Swinton U.D.	A
Tamworth M.B.	A
Tenterden	A2
Tewkesbury	A1
Thames Haven	A
Thetford	A3
Thorpe Bay	A
Thurrock U.D.C. Area	A
,, North of, to Billericay	A1
Tilbury	A
Todmorden	A
Tonbridge	A1
Torquay	A1
Totnes	A1
Trowbridge	A2
Tunbridge Wells	A1
Tynemouth C.B.	A
Uppingham (Salop)	A1
Uttoxeter U.D.	A2
Wakefield	A
Wallsend B.	A
Walsall C.B.	A
Walsden	A
Walton-on-Naze	A1
Ware	A
Warminster	A2
Warrington	A
Warwick M.B.	A
Wellington R.D.	A1
Wells (Norfolk)	A3
Welwyn	A
Welwyn Gar. City	A
West Bromwich C.B.	A
Westbury	A2
Westcliff-on-Sea	A
Westerham	A1
Weston-super-Mare	A1
Weybridge	A
Weymouth	A2
Whitby U.D.	A1
Whitstable and District	A2
Wickford	A1
Widnes	A
Wigan	A
Wigton	A3
Willington	A
Wilmslow	A
Wilts. County of	‡A2
Winchester	A2
Windermere	A3
Windsor and Eton	A1
Wisbech	A2
Witham	A2
Woking (District)	A1
Wokingham	A2
Wolverhampton C.B.	A
Woodbridge	A3
Worcester C.B.	A
Workington	A
Worksop M.B.	A
Worthing	A2
Wrexham (incl. Cefn)	A
Wroughton	A2
Wylam	A
Wymondham	A3
York	A

* For Birkenhead, Liverpool, and London the rates are :—Craftsmen, 2s. 11d.; Labourers, 2s. 4d. In the case of London the rate beyond the 12-mile radius is :—Craftsmen, 2s. 10½d.; Labourers, 2s. 3½d.

† Plus 2d. per working day.

‡ This is the County rate and applies except where higher grades are stated.

NOTE.—Carpenters, Joiners and Plumbers in all towns and districts receive 2d. per day Tool Allowances.

WOMEN'S RATES.—In all districts throughout the country the rate of wages for women engaged in craft processes is 1s. 11½d. per hour. Women introduced to carry out work other than craft processes, 1s. 7½d. per hour.

For Building Trade Wages in Scotland, see page 25

PRICES CURRENT OF MATERIALS*

NOTE.—These prices apply to large quantities of materials at works at London stations, or site, in London area as stated. Prices for smaller quantities ex merchant's warehouse will of course be higher. Owing to the exceptional circumstances which prevail at the present time, prices of materials should be confirmed by inquiry. The prices of softwoods are for cash on delivery.

BRICKS, etc.

	£ s. d.
First Hard Stocks	8 15 0
Second Hard Stocks	8 0 0
Mild Stocks	6 10 0

All loaded free into lorry at the works. The question of haulage is still very difficult and prices must be obtained from job to job.

2½-in Nominal Phorpres Bricks.	At Maiden Lane Stn., per 1,000.	To Sites in West Central District per 1,000.
	s. d.	s. d.
Commons	73 0	85 0
Cellular	67 11	82 11
Keyed	75 0	87 0
Cellular Keyed	69 11	84 11
Rustics	93 0	105 0
Cellular Rustics	87 11	102 11
Single Bullnose	93 0	105 0
Best White Facings	156 6	157 10†
" "	142 10*	—
Sandfaced "	103 0	115 0
Cortex Facing Brick	88 0	100 0

* At Kings Cross Stn. † ex Kings Cross Stn.

	£ s. d.
Best blue Pressed Staffs. (London Stns.)	18 9 0
Do. Bullnose (London Stns.)	19 2 0
Blue Wire Cuts (London Stns.)	16 7 6

Best Stourbridge Fire Brick (London Stns.) :—

£ s. d.	£ s. d.
2½ in. 16 18 6	3 in. 19 16 0

GLAZED BRICKS (London Stns.). The prices given below are now subject to a percentage addition of 22½.

Best White Ivory and Salt Glazed		D'ble Stretchers D'ble Headers	53 10 0	48 10 0
Stretcher	40 0 0	One side & two ends	54 10 0	
Headers	39 10 0	Two sides & one end	56 0 0	
Quoins, Bullnose & 4½in. Flats	50 0 0	Splays and Squints	52 0 0	

Second Quality, £2 0s. per 1,000 less than best. Cream and buff, £2 0s. extra over white. Other colours. Hard Glaze, £5 10s. 0d. extra over white.

Haulage to site 20s. 1,000.

PARTITION SLABS.

Delivered Central London Area.

HOLLOW CLAY PARTITION BLOCKS.
London Brick Company.

Minimum Lorry Loads. Keyed.	s. d.
2" per yd. sup. 120 yds.	3 1
2½" " " 100 "	3 4
3" " " 100 "	4 0
4" " " 84 "	4 7

Half blocks *add* 2s. per yard super to above prices

CLINKER CONCRETE.

2" per yd. sup.	2 8	3" per yd. sup.	4 0
2½" " "	3 4	4" " "	5 3

CRANHAM TERRA COTTA.

Size 12 x 9 x 2" per yd. super	3 1
Size 12 x 9 x 2½" " "	3 4
Size 12 x 9 x 3" " "	4 0
Size 12 x 9 x 4" " "	4 7

HEMPSTEAD—KEYED TWO SIDES.

12 x 9 x 2"	3 1	12 x 9 x 3"	4 0
12 x 9 x 2½"	3 4	12 x 9 x 4"	4 7

Per yard super d/d. Free on site, London.

Plus 2d. for smooth one side, and 4d. for smooth both sides.

STONE.

	s. d.
BATH STONE—	
Monks Park	5 4
St. Aldhelm Box Ground	5 10
Delivered in railway trucks at South Lambeth, G.W.R., per ft. cube.	
PORTLAND STONE—	
Brown Whitbed, in random blocks of 20 ft. average, delivered in railway trucks at Nine Elms, S.Rly. per ft. cube	6 1½
NOTE.—1d. per ft. cube extra for every ft. over 20 ft. *average* and ½d. beyond 30 ft.	
HOPTON-WOOD STONE—	
F.O.R. Quarries, Wirksworth, Derbyshire. Random blocks up to 3 ft. 3 in. long and not over 10 cu. ft. per ft. cube	22 6
Slabs—Random sizes sawn 2 sides, up to 5 ft. long and not over 15 ft. super, ½ in. per ft. super	4 7
YORK STONE, BLUE—*Robin Hood Quality.* Delivered at any Goods Station, London.	
6 in. sawn two sides landings to sizes (under 30 ft. super) per ft. super	9 4
6 in. rubbed two sides, ditto "	10 10
3 in. sawn two sides slabs (random sizes) "	4 5
2 in. to 2½ in. sawn one side slabs (random sizes) (paving) "	2 4
1½ in. to 2 in. ditto "	2 1½
HARD YORK—	
Delivered at any Goods Station, London	
Scrappled random blocks per ft. cube	13 4
6 in. sawn two sides landings to sizes (under 40 ft. super) per ft. super	10 0
6 in. rubbed two sides, ditto "	11 10
4 in. sawn two sides slabs (random sizes) "	6 5
3 in. ditto ditto "	4 10
2 in. self-faced random flags per yd. super	19 9

CEMENT.

Best British Portland Cement. Standard Specification delivered London area	£ s. d.
6-ton loads and upwards site per ton	3 0 6
1- to 6-tons site	3 3 6
In non-returnable paper bags charged at 11/– net per ton or 7d. each net per sack in lots of less than 1 ton.	
In non-returnable jute sacks charged at 11/– per ton.	
In returnable jute sacks charged at the rate of 35/6 net per ton of cement of 1/9½ net per sack in lots of less than 1 ton. Credit on return at 1/6 net per sack.	
In returnable cotton sacks charged at the rate of 3/4 net each sack. Credit on return at 3/– net each sack.	
"Ferrocrete" Rapid Hardening Cement 6-ton. loads and upwards site	3 6 6
1- to 6-tons site	3 9 6
In paper bags 11/– per ton extra.	
"Aquacrete" Water Repellent cement, 31/6 per ton on ordinary "Blue Circle" prices. In paper bags, 9/– per ton extra.	
Red, Buff or Khaki "Colorcrete" in 6-ton lots	5 2 0
In paper bags 9/– per ton extra.	
Other colours, according to colour. In 4-ton lots from 173/– to 397/– per ton (including paper bags).	
"Snowcrete" White Portland Cement (In free paper bags)	11 14 0
under one ton per cwt.	0 13 11
"417" Cement (Ultra Rapid Hardening) Delivered Site London Area in 6-ton lots and upwards	4 2 0
In paper bags 9/– per ton extra.	
Super Cement (Waterproof), bags extra	4 12 0
Cullamix Tyrolean Finish....£7 15 6 to (1-ton lots and upwards, including cost of paper bags).	9 9 0

£ s. d.	£ s. d.
Parian Cement 8 1 9	Keen's Cement, White 8 1 9
	Pink 7 15 6

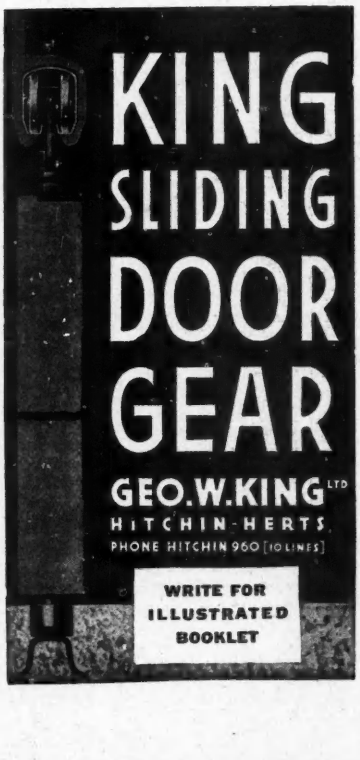
PLASTER.

	£ s. d.		£ s. d.
Coarse, Pink	4 15 3	Sirapite, Coarse	4 16 3
" White	5 4 9	" Finish	5 4 3

Above prices for 1-ton loads and over London Area.

Blue Lias Lime, inc. bags, 6-ton lots	5 17 6	Hydrated Lime, 6-ton lots	4 1 6
Granite Chips, 6-ton lots	2 5 0	Lump Lime, 6-ton lots	3 15 3
		Hair, per cwt.	4 4 6

Stourbridge Fireclay in paper bags £4 2s. 0d., 6-ton lots at railway depot.



SAND.

D/D site in full lorry loads. Average of prices for Boroughs of Westminster, Paddington, Holborn and St. Pancras.

	s. d.
Thames Ballast per yd.	15 9
Pit Ballast "	15 10
Pit Sand "	15 2
Washed Sand "	17 0
½ in. shingle "	15 2
¼ in. Broken Brick "	17 6
Pan Breeze "	10 4

TILES.

Delivered at London rate stations in full truck loads of not less than 6 tons ..... Per 1,000 f.o.r. London.

Best machine-made tiles from Broseley or Staffordshire districts	9 14 6
Ditto, hand-made, ditto	11 11 0
Ornamental ditto	12 4 0
Hip and valley tiles—Hand-made	19 5
(per dozen) —Machine-made	18 4

NOTE.—Breakage in transit, purchasers' responsibility.

SLATES.

First quality slates from Penrhyn or Portmadoc, carriage paid in full truck loads to London Rate Station.

Per 1,000 actual	£ s. d.		£ s. d.
24 by 12	67 14 0	18 by 10	34 13 0
22 by 12	59 2 0	18 by 9	31 2 0
22 by 11	53 6 6	16 by 10	30 10 0
20 by 12	46 10 0	16 by 8	23 16 0
20 by 10	44 12 6		

NOTE: Breakage in transit, purchasers' responsibility.

PLUMBERS' BRASS WORK.

Delivered in London.

M.O.H.

S.D. BIB COCKS CRUTCH HEAD, FOR IRON.

½ in 66/– ¾ in. 108/– per doz.

TOILET BIB COCKS FOR IRON.

½ in. 114/– ¾ in. 171/– per doz.

S.D. STOP COCKS FOR IRON.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
72/–	111/–	189/–	269/–	363/–	590/– per doz.

S.D.S. COCKS WITH TWO UNIONS FOR LEAD.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
102/–	164/–	264/6	369/–	438/–	736/– per doz.

DOUBLE NUT BOILER SCREWS.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	2 in.
17/–	20/–	33/–	68/–	108/–	140/– per doz.

HEAVY CROYDON BALL VALVES.

½ in.	¾ in.	1 in.	1¼ in.	1½ in.	
93/–	149/–	185/–	371/–	500/–	per doz.

CAPS AND SCREWS.

1¼ in.	1½ in.	2 in.	3 in.	3½ in.	4 in.
23/6	26/6	45/–	68/–	89/–	112/– per doz.

BRASS SLEEVES.

1¼ in.	2 in.	3 in.	3½ in.	4 in.
29/–	31/–	67/–	83/–	101/– per doz.

LEAD TRAPS WITH BRASS CLEANING SCREWS.

1½ x 6 lb.	1½ x 6 lb.	2 x 7 lb.	3 x 7 lb.
Lead P. 58/3	72/9	116/6	199/– per doz.
Lead S. 70/6	87/3	143/–	257/0 per doz.

SOLDER.—Plumbers', 3/4, Tinmen's 4/2, Blow pipe, 4/3 per lb.

Copper Tubes 1/11½ per lb. Basis.
Brass Tubes .....2/0 per lb. Basis.
Basis prices are subject to extras.

PAINTS, etc.

	£ s. d.
Raw Linseed Oil (5 galls.) per gallon	1 1 9
Boiled Linseed Oil (5 galls.) "	1 2 3
Genuine White Lead (free kegs) cwt.	8 3 6
Genuine White Lead Paint (tins free) gall.	2 5 0
Genuine Red Lead cwt.	7 18 9
Putty (free packages) cwt.	3 0 0
Size XD quality ftkn.	0 8 0

Turpentine substitute can be obtained and prices vary according to quality from 3/8 gallon upwards.

VARNISHES, etc.

	Per gallon.
Oak Varnish Outside	1 6 0
Fine do. "	1 16 0
Fine Copal "	1 15 0
Pale Copal "	1 12 8
Floor Varnish Inside	1 10 0
Fine Pale Paper "	2 1 0
Hard Drying Oak "	1 10 0
Fine Hard Drying Oak "	1 12 0
Fine Copal Varnish "	1 13 6
Best do. "	1 16 0
Best Japan Gold Size "	1 15 0
Best Black Japan "	1 8 6
Brunswick Black	1 4 6
Berlin Black	1 8 6
Knotting (patent)	1 12 6
French and Brush Polish	1 8 6
Liquid Dryers in Terebene	1 8 6

GLUE.

Best Scotch Glue per ½ cwt.	4 14 6
Croid Glue per lb.	2 9

* The information given on these pages has been specially compiled for THE BUILDER, and is copyright. The aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information. Prices are subject to 2½ per cent. cash discount.

PRICES CURRENT OF MATERIALS—(contd.)

See Note at top of preceding page.

METALS.

JOISTS, GIRDERS, &C., TO LONDON STATION.

	PER TON
R. S. Joists, cut and fitted	£30 10 0
Plain Compound Girders	£35 0 0
,, ,, Stanchions	£42 10 0
In Roof Work	£53 0 0

NOTE.—These prices are for standard pieces and not special pieces of an awkward nature.

MILD STEEL ROUNDS.—To London Stations, per ton.

Diameter.	£ s. d.	Diameter.	£ s. d.
½ in.	26 17 6	¼ in.	24 12 6
⅝ in.	26 2 6	⅜ in. to 2¾ in.	23 17 6
¾ in.	25 7 6		

W. I. TUBES.

TUBES AND TUBULARS.

Galv.	Class A.	List price, less	12½ per cent.
,,	,, B.	,,	7½ ,,
,,	,, C.	,,	Nett.
Black.	,, A	,,	less 33 per cent.
,,	,, B	,,	,, 22½ ,,
,,	,, C	,,	,, 15 ,,

C.I. HALF-ROUND GUTTERS.—London Prices ex Works, per yd. in 6 ft. lengths.

	Gutters.	Nozzles	Stop ends.
3 in.	2/5	2/2	7d.
3½ in.	2/8	2/5	7d.
4 in.	2/10	2/7	1/–
4½ in.	3/1	3/–	1/2
5 in.	3/5	3/3	1/3

O.G. GUTTERS.

3 in.	3/1	2/10	9d.
3½ in.	3/7	2/10	1/–
4 in.	3/7	3/–	1/2
4½ in.	3/8	3/5	1/3
5 in.	4/6	4/–	1/5

RAIN WATER PIPES.

Per yd. in 6 fts.	Pipe.	Bends. Angles.	Branches
2 in.	5/–	2/7	3/10
2½ in.	5/3	3/–	4/6
3 in.	5/10	3/8	5/6
3½ in.	6/8	4/5	6/5
4 in.	7/8	5/3	7/8

NET PRICES.

Tonnage allowance—4-ton lots, 5 per cent.
2-ton lots, 2½ per cent.

L.C.C. COATED SOIL PIPES.—London Prices, ex stock.

Per yd. in 6 fts.	Pipe.	Bends.	Branches
2 in.	5/11	4/6	5/6
2½ in.	6/3	5/1	6/10
3 in.	6/11	5/6	8/3
3½ in.	7/10	6/10	9/6
4 in.	8/11	7/8	11/1

L.C.C. COATED DRAIN PIPE.

cwt. qr. lb. per yard in 9 fts.	Bends.	Branches
4 in. 1 1 17	16/3	12/3	21/6
6 in. 2 0 1	24/2	25/4	43/9

	Per ton basis in London. £ s. d.
IRON. — Staffordshire Crown, Merchant quality	28 5 0
IRON—Staffordshire Marked Bars	36 0 0
Mild Steel Bars	22 10 0
Mild Steel Hoops	23 17 6
	Ex Merchant's Stock per ton (two-ton) lots. £ s. d.
Soft Steel Sheets C.R. and C.A.—	
20 gauge	28 7 6
24 gauge	29 7 6
26 gauge	29 12 6
Galvanised Corrugated Sheets, 6 ft. to 9 ft.—	
20 gauge	34 15 0
24 gauge	36 10 0
26 gauge	38 15 0
Galvanised Flat Sheets, C.R. and C.A.—	
20 gauge	35 15 0
24 gauge	37 10 0
26 gauge	39 15 0
	Per ton. £ s. d.
Cut Nails, 3 in. and up, 1 ton lots	36 15 0

ALL NET.

METAL WINDOWS. — Standard sizes suitable for complete houses, included all fittings, painting two coats, and delivery to job, average about 5s. 0d. to 5s. 3d. per foot super.

LEAD, etc.

(Deliveries in London 5 cwts.)	Per ton. £ s. d.
LEAD.—Sheet, English, 3½ lb. and up	141 10 0
Pipe in coils	142 15 0
Soil pipe	145 15 0
Compo pipe	149 5 0

NOTE.—Country delivery, 10/– per ton extra, lots under 3 cwt., 4/– per cwt. extra and over 3 cwt. and under 5 cwt., 3/– per cwt extra. Extra if cut to size. Old lead, ex London area, per ton, £70 0. 0. Buyers pay carriage.

BUILDING TRADE WAGES IN SCOTLAND

Following are grade rates authorised by the Scottish N.J.C. from July 11, 1948. Every effort is made to ensure accuracy, but we cannot be responsible for errors that may occur.

Grade Classification — A Craftsmen.... 2/9½ — Labourers.... 2/3

Aberdeen ....A	Dumfriesshire ....A	Inverness ....A	Perthshire ....A
Ayrshire ....A	Dundee ....A	Inverurie ....A	Peterhead ....A
Banff ....A	Dunoon ....A	Kincardineshire ..A	Renfrewshire ....A
Berwickshire ....A	East Fife ....A	Kinross-shire ....A	Rothesay ....A
Bridge of Allan....A	East Lothian ....A	Lanarkshire ....A	Roxburgshire ....A
Broughty Ferry....A	Edinburgh ....A	Midlothian ....A	St. Andrews ....A
Clackmannanshire A	Fifeshire ....A	Monifieth ....A	Selkirkshire ....A
Doune....A	Forfarshire ....A	Moray and Nairn ..A	Stewartry ....A
Dunblane ....A	Glasgow ....A	Newport ....A	Stirlingshire ....A
Dunbartonshire....A	Greenock ....A	Peeblesshire ....A	Stornoway ....A
Dumfries ....A	Hamilton ....A	Perth ....A	Tayport ....A
			West Lothian ....A

The Scottish N.J.C. award on which this is based provides for variation to current rates of Apprentices and Trainees' wages, which will be increased according to scale.
The Information given in this table is copyright.
Painters' rates : 2/9½ Grade A ; 2/8½ Grade B. (Grade B towns are Banff and Moray and Nairn.)

GLASS.

SHEET GLASS, ORDINARY GLAZING QUALITY.

CUT SIZES.	Per ft. Super. d.
18 oz.	4½
24 oz. clear	5½
26 oz.	7½
32 oz.	9½

ENGLISH ROLLED PLATE AND FIGURED CATHEDRAL, ETC., IN CUT SIZES.

Over 500 ft. super of all kinds.	Per ft.
Rolled plate, ¼ in.	7½
Rough cast, 3/16 in.	8½
Rough cast, ¼ in.	8½
Figure rolled, and Cathedral white	7½
Figure rolled, and Cathedral tinted	10½
Rolled sheet	6
Reeded, Broad Reeded, Cross Reeded and Chevron Reeded, ¼ in. thick	11
Rolled plate is the same price as rough cast double rolled.	Per ft. d.
Wire Cast, ¼ in. thick	9½
Georgian Wired Cast	10½

HOLLOW GLASS BLOCKS.

	s. d.	
P.B. 2—5½ in. x 5½ in. x 3⅞ in.	2 6	each net.
P.B. 3—7½ in. x 7½ in. x 3⅞ in.	3 10	,,
P.B. 32—7½ in. x 7½ in. x 3½ in.	3 10	,,
Radiused Corner Brick to match up with—		
P.B. 2	4 6	,,
P.B. 3	6 0	,,
P.B. 32	6 0	,,

TIMBER, SOFTWOODS AND HARDWOODS.

HOME GROWN TIMBER PRICES.—*See Statutory Rules and Orders*, 1947, No. 94, price 5d. net.

IMPORTED SOFTWOODS PRICES.—*See Statutory Rules and Orders*, 1947, No. 731, price 1s. 1d. net.

IMPORTED HARDWOODS PRICES.—*See Statutory Rules and Orders*, 1947, No. 1524, price 1s. 1d. net.

Note.—The above can be obtained from H.M. Stationery Office, York House, Kingsway, W.C.2.

AYGEE LIMITED WATerloo 6314
100, WESTMINSTER BRIDGE RD., LONDON, S.E.1

The Hall Mark AYGEE *of Craftsmanship*

LEADED LIGHTS DELIVERED IN THREE WEEKS

FROM RECEIPT OF ORDER

ENGLAND'S LARGEST GLAZING CONTRACTORS

THE SCOTTISH BUILDER

NEW BUILDINGS

Edinburgh.—Estimated at £80,000 an extension to be made to the University.

East Kilbride.—Extensions to be made to factories for which the architect is Donald Reay, East Kilbride Development Corporation, Torrance House, East Kilbride.

Edinburgh.—New shops, etc., to be erected at Shaughton-rd., etc., for which the architect is A. G. Forgie, Municipal-bldgs., High-st.

Lanarkshire.—County Works Departments, Albert-st., Motherwell, are to carry out alterations and additions, etc., to the following schools; Newmains Catholic: Beckford-st. Public; Bellshill Academy; Chapelside Public, Airdrie; Rutherglen Academy; Farm-st. Public, Rutherglen; Technical College, Coatbridge; Summit Public, Coatbridge; Morningside Public; Chapelhall Catholic; Crosshill School, Strathaven; Beckford Primary, Newmains; St. Patrick's Catholic, Shotts, and Gallowflat Primary.

Council Calls for Private Building.

The Minister of Health has been asked to help councils to solve the housing problem by permitting more private building. This request was made in a letter from the Henley (Oxon.) Rural Council, who believe they might have to halt their housing programme because of rising costs. It has been pointed out that many people in the district are living under conditions of great hardship although builders are willing to start work and plans have been passed. The chairman of the council, Captain C. J. Goldsmid, considers that there should be a 50-50 allocation to local authorities and private enterprise building in the area this year. This, he says, would not exhaust the demand, and would not overtax the resources of the small builders in the area. The council are sending their protest to Sir Gifford Fox, M.P., and also to the Rural District Councils' Association, as well as to Mr. Bevan.

Clerks of Works Diploma.

The first examination for the Association of Building Technicians' Clerk of Works Diploma will be held in April, next. For this year the examination will be only in London unless demand warrants separate sittings in other centres. All applications must reach the A.B.T. head office, 5, Ashley-place, S.W.1, by February 28, accompanied by an entrance fee of £1 1s. Sample examination papers are available from the above address for 1s., post free. The written examination will last for two days, followed by an oral examination. As a temporary measure only, applicants who have held the position of clerk of works or general foreman for at least ten years will be exempt from the written examination. The following are the examiners: Messrs. D. E. E. Gibson, A.R.I.B.A.; Norman Keep, F.R.I.B.A.; F. Skinner, A.R.I.B.A.; J. Pinckheard, A.R.I.B.A.; Colin Penn, A.R.I.B.A.; Paul Mauger, A.R.I.B.A., and J. W. Nicolls, F.R.I.C.S.

NEWS IN BRIEF

British Standards.

The "British Standard for Wrought Copper and Wrought Zinc Rainwater Gutters, Pipes and Fittings" (B.S. 1431: 1948), may be obtained from the B.S.I., 24, Victoria-street, S.W.1, price 2s. 6d., post free. Also available is the "British Standard for Galvanised Wire Netting for Agricultural Purposes" (B.S. 1485: 1948), at 1s., post free.

Hardwood for Private Purchase.

The Timber Controller announces that the following species of hardwood may now be deleted from the list of material reserved for Timber Control procurement (Appendix "A" 4th Revision) and is released for private purchases under the Scheme:—Shorea, commonly known as Maranti red, white, yellow, or Parawan, and originating in Malaya-Sarawak.

Fireplaces in Yorkshire.

Applications from 1,700 tenants of Bradford Corporation's houses for installation of lounge-type fireplaces in place of existing Yorkshire ranges have been received by Bradford's housing committee. A special sub-committee has been formed to determine the types of fireplaces from which tenants may choose, and to evolve a scheme for fixing them.

Salt Glazed Stoneware Pipes.

The works of Messrs. Naylor Bros. (Clayware), Ltd., manufacturers of sanitary pipes, conduits, filter tiles, firebricks. etc., Denby Dale, near Huddersfield, have been completely reconstructed following a fire in April, 1945. The firm has recently published a booklet entitled "Salt Glazed Stoneware Pipes," which gives a comprehensive description of the manufacture of stoneware pipes.

Rubber for Heating.

A form of wall panelling of specially compounded rubber as a heat-providing element is now being manufactured in America. This conductive rubber is the subject of an article in a recent edltion of "Rubber Developments," the magazine issued by the British Rubber Development Board, Market Buildings, Mark-lane, E.C.3. Another feature is "Absorption of Sound by Coated Porous Rubber Wall-covering Layers," by Dr. Kosten.

Guide to Plumbing.

A revised edition of the "Minimum Specification for Drainage Work in connection with buildings" has been issued by the Institute of Plumbers, 81, Gower-st., W.C.1, at 3s. 3d., post free. The aim of the specification is to lay down a minimum of sound practice and to provide codes to which reference may readily be made by all concerned in planning, administering and executing sanitary and plumbing work.

The Fourth World Power Conference.

The theme of the Fourth World Power Conference, to be held in London in July, 1950, will be "World Energy Resources and the Production of Power." The headquarters of the conference will be in the building of the Institution of Civil Engineers. The technical programme has been published. Copies may be obtained on application to the general secretary, Fourth World Power Conference, 201-2, Grand Buildings, Trafalgar Square, W.C.2.

British Pavilion at Ghent Fair.

It is intended to incorporate a special British pavilion in the next International Fair of Ghent, which is to be held from September 10 to 25, 1949.

Early application for space should be made to British Pavilion, Ghent Fair, 395a, Edgware-road, London, W.2.

A Book on Aluminium Paste.

The British Aluminium Company, Ltd., Salisbury House, London Wall, E.C.2, have published a book on "Aluminium Paste." This deals with the characteristics of aluminium paint and includes illustrations of its wide use. Information is given on recommended painting technique and on the storage, properties and testing of aluminium paste.

Bigger Parcels by Passenger Train.

The Ministry of Transport Order limiting the weight of packages to be accepted for conveyance by passenger train to 1 cwt., which has been in operation since 1942, has now been revoked, and the Railway Executive state that British Railways are now prepared to accept merchandise for conveyance by passenger train under normal pre-war conditions. However, the local stationmaster or agent should be consulted before heavy packages are tendered for conveyance by passenger train.

Changes in Goods Price Order.

The Board of Trade, in consultation with the Central Price Regulation Committee, have made an Order which came into operation on January 3. This amends the Miscellaneous Goods (Maximum Prices) (Amendment) Order, 1948. The changes are as follows:—Paint and distemper, stain, lacquer and oil varnish are no longer price-controlled under the Order. Non-ferrous bolts, nuts, etc., have been excluded from the Order as their prices, like those of steel articles of the same sort which are already excluded from the Order, are adequately supervised by the Ministry of Supply.

WOOD
BLOCK
FLOORING
is now
AVAILABLE

VIGERS BROS.
LTD.
14/18, HOLBORN, E.C.1
HOL. 2718
and 2719

TRADE NEWS

Sink Geyser in Demonstration Theatre.

The Ewart M. 75 sink geyser has been fitted by the Slough Gas Company as a multi-point to supply hot water to the sink in their demonstration theatre. This product of Messrs. Ewart and Son can be used alternatively as a single-point geyser with swivel spout.

Booklet on Concrete Waterproofing.

Messrs. John Freeman, Sons and Co., Ltd., Cementone Works, Wandsworth, S.W.18, have issued a booklet entitled "Cementone No. 2," the name of their waterproofing powder for cement and concrete renderings. This booklet gives suggested specifications and many sketches illustrating methods of treatment.

Portable Utility Winch.

The "Wickham Portable Utility Winch," manufactured by the Wickham Engineering Co., Ltd., 34, Victoria-street, S.W.1, is designed on the principle of a wheelbarrow. It is 4 ft. 6 in. long, 1 ft. 10 in. wide, and 1 ft. 11 in. high, and weighs approximately 2½ cwt. Its capacity is 3½ cwt. direct pull and 7 cwt. with double fall.

New Fireproof Door.

Insurance experts and fire research technicians from several municipal authorities, as well as from the British Electricity Authority, were present when the latest type of "Durasteel" door produced by Messrs. Durasteel Roofs, Ltd., 415, Oldfield-lane, Greenford, was tested recently at the Fire Offices Committee Test Research Station at Boreham Wood, Hertfordshire. The door withstood heat approaching 1000 deg. C., an impact test and the jet from a high-pressure fire hose for two minutes immediately the fire test ended. Fire Office Committee observers said that the door had satisfied grade C (2 hours) fire test for British Standards Definition No. 476. The door is built of the same 3DF2 "Durasteel" panelling as that supplied to the Iraq Petroleum Company for erection as fire barriers along their new pipe line.

A New Type of Window.

A double casement window worked on a single scissor movement, hinged in the centre, and running by means of four pivotal pins with rollers rotating to give an easy movement and running along a metal track fixed in headers and cills, is being manufactured by Messrs. D. A. Rowland-Hill and Sons. The sash frames are recessed into jambs. This, it is claimed, makes the window storm-proof and draught-proof, and the breaking of the grain prevents shrinkage and swelling. The sash frames are also grooved to prevent shrinkage and swelling. The metal track fixed in the cills runs under the jambs and is sealed at both ends to prevent any moisture settling. The Rowhill barlock safety guard and locking device is manufactured in aluminium alloy to save corrosion, and the window can be opened up to 80 degrees, making it easy to clean from inside the building. One or both windows can be opened by turning a clamping nut. The window is said to be burglar-proof. The scissor arms form a safety guard, thus making accidents from falling out impossible. The "Rowhill" window is made for double glazing, and the same barlock safety guard and locking device is used for this. At present 3,500 of these windows are being manufactured in wood each week under licence. Arrangements are being made for manufacture in steel and aluminium alloy.

Directors Appointed.

The firm of Messrs. Truett and Steel, building contractors and decorators, High-street, Thornton Heath, and Palace Chambers, Westminster, announce the addition of Messrs. L. T. Truett, R. F. Steel and W. J. Foster to their board of directors.

Ventilation in Fluorescent Lamps.

Chokes and capacitors used with fluorescent lamps are required to operate within certain temperature limits. The introduction of shorter lamps, such as the 2-ft. size, means that these items of gear are placed closer to the lamp ends, which are the hottest part, while the design of decorative fittings often involves lamps and gear being in close proximity in the interests of external appearance. Furthermore, the heating effect on a choke used with two 40-watt lamps is greater than when a single 80-watt lamp is being operated. The problem of providing adequate ventilation in these circumstances has been the subject of special studies by the General Electric Co., Ltd., Magnet House, Kingsway, W.C.2, as a result of which fittings with a ventilated gear compartment have been introduced.

FUTURE CONSTRUCTION

PUBLIC APPOINTMENTS

Full details of Public Appointments open will be found in the Advertisement pages of this and previous issues.

CONTRACTS OPEN

For some contracts still open but not included in this list see previous issues. Those with an asterisk are advertised in this number. The dates at the heads of paragraphs are those for the submission of tenders; a dagger (†) denotes closing date for applications; the name and address at the end refer to the person from whom particulars may be obtained.

BUILDING

JANUARY 10.

†***Coventry E.C.**—Kitchen and dining-room at Barkers' Butts School. Director of Education, Council House. Dep. £2 2s.

JANUARY 11.

†***Buckingham R.D.C.**—5 houses and certain site works at Westbury. Scherrer & Hicks (FF.), 10, Dover-st., London, W.1. Dep. £1 1s. Tenders by January 25.

JANUARY 12.

***Norfolk E.C.**—Erection of Hel'esdon Infants' New School. F. G. Limmer (F.), Ed. Architect, Stracey-rd., Norwich. Dep. £5.

***Salford T.C.**—Pavilion on playing fields at Littleton-rd. City E. Dep. £1 1s.

†***South Wales and Monmouthshire Approved School.**—(a) Extensions and alterations to school and administrative buildings, together with heating and hot water installation, gas and electrical services; (b) erection of 5 staff houses. Howell T. Davies, Clerk to Managers, South Wales and Monmouthshire School, nr. Treharris, Glam. Dep. £5.

JANUARY 14.

†***East Sussex C.C.**—Conversion of Saltcote-pl., Playden, Rye, into hos.el. E. A. Verger (F.), County A., County Hall, Lewes.

†***Oakengates U.D.C.**—18 houses and 4 old peoples' dwellings at Furnace-la., Trench, Wellington; 12 houses and 4 old peoples' dwellings at St. George's By-pass; 6 houses at Lincoln-rd., Wrockwardine Wood. C., Council-chbrs. Dep. £2 2s.

†***Plymouth T.C.**—(1) 93 flats at Union-st.; (2) domestic hot water and central heating to above flats; (3) electrical installation to above flats. E. G. Catchpole (A.), City A., Weston Lodge, Seymour-rd. Dep. £3 3s. Tenders by February 4.

†***Wimbledon T.C.**—Rebuilding Nos. 87, 89, 91, 93 and Faraday-rd. B.E. & S., Town Hall. Dep. £5 5s.

JANUARY 15.

†***South Western Regional Hospital Board.**—New nurses' home and new male wards at Tehidy Sanatorium, Camborne. S. Gregson (F.), County A., County Tall, Truro.

JANUARY 17.

†**Abingdon T.C.**—36 houses at Fitzharris and Abingdon. F. Russell Cox (F.), Blanket Hall, Witney, Oxon. Dep. £2 2s.

PRICES OF MATERIALS

LEAD SHEET AND PIPE

Following upon an increase in the cost of lead, the Minister of Works has authorised an increase of £11 15s. per ton in the maximum selling prices of lead sheet and pipe. This increase applies to all sales made on and after January 1.

PLASTERBOARD

Following a review of the costs and prices of Plasterboard, the Minister of Works has authorised an increase of 9d. per square yard in the selling price of Wallboard and Baseboard to operate as and from January 1, 1949.

PLASTER

Following a review of the costs and prices of plaster, the Minister of Works has authorised an increase of 10s. per ton in the selling price of Plaster and Keene's Cement manufactured by British Plaster Board, Ltd. The increase will come into operation as and from January 1, 1949.

***Bootle C.B.**—Contract 1, scheme 16, 2 pairs of houses at Rimrose-rd./Addison-st. Contract 2, scheme 17, 3 pairs of houses at Irlam-rd. Contract 4, scheme 18, 1 pair of houses at Stanley-rd. Contract 5, scheme 20, 16 houses at Anglesey-st. B.E. & S. Dep. £1 1s. each scheme.

***Halifax C.B.**—Work in separate trades or all trades for erection of 28 houses at Luddenden. B.E. Dep. £2 2s.

Hemel Hempstead R.D.C.—10 houses at Buckwood-rd., Markyate. E. & S., 2, Marlowes, Hemel Hempstead. Dep. £2 2s.

†***Lincoln (Parts of Kesteven) C.C.**—Additional office accommodation at County Offices, Sleaford. C. B. Metcalfe (F.), County A., County Offices, Sleaford. Tenders by January 31.

†***Lincoln (Parts of Kesteven) C.C.**—Two hostel blocks at Stoke Rochford Hall, nr. Grantham. L. D. Tomlinson (F.), Quadrant Arcade, Romford, Essex. Tenders by January 31.

†***Tottenham B.C.**—(a) 24 flats; (b) 52 flats and off-licence with flat; (c) 24 old persons' flats at Devon-rd. housing scheme. B.E. & S., Town Hall. Dep. £2 2s.

JANUARY 18.

Leeds T.C.—Dormitory block at Thorp Arch Grange Approved School. City A., Priestley House. Dep. £2 2s.

JANUARY 19.

Hornsea U.D.C.—Six houses and shops at Hornsea Burton estate. E. & S., Town Hall. Dep. £2.

JANUARY 20.

Baldock U.D.C.—17 houses at Weston-way estate. C., Council Offices.

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Leeds T.C.—144 houses at various estates. City A., Priestley House. Dep. £2 2s.

Wellingborough U.D.C.—30 houses at Croyland Hall Farm estate. E & S., Council Offices, Swanspool. Dep. £2 2s.

JANUARY 21.

Malmesbury R.D.C.—10 houses at Crudwell site. Edwards & Webster, 32, Market-pl., Chippenham. Dep. £3 3s.

JANUARY 24.

***Congleton T.C.**—27 houses at Rood Hill estate, contract No. 3. C. Brown, M.I.Mun.E. (A.), B.E. & S., Town Hall. Dep. £2 2s.

***Hemel Hempstead T.C.**—22 houses at Beechfield estate. T.C., Town Hall. Dep. £2 2s.

***Nuneaton T.C.**—52 houses at Caldwell. C. Ashton, B.S. Dep. £2 2s.

JANUARY 25.

***Watford R.D.C.**—18 houses at Kendals-cl., Radlett. C., Council Offices, Wynyard House, Langley-rd. Dep. £1 1s.

***Watford R.D.C.**—16 houses at Kendals-cl., Radlett. C., Council Offices, Wynyard House, Langley-rd. Dep. £1 1s.

JANUARY 26.

Alton R.D.C.—Three pairs of houses at Lasham site. E., Barton End. Dep. £3 3s.

Downham R.D.C.—Two houses at Southery. E. & S., 23, London-rd., Downham Market. Dep. £2 2s

***St. Ives R.D.C.**—Four houses at Houghton and Needingworth. Lea & Milner, 4, Market-hill, Huntingdon. Dep. £2 2s.

***Surbiton T.C.**—Temporary office accommodation at Shalston House, Shalston Villas. B.S., Council Offices. Dep. £2 2s.

***Wood Green B.C.**—18 flats at "The Hollies," Bounds Green-rd. B.E. & S., Town Hall. Dep. £2 2s.

JANUARY 28.

***Lydd T.C.**—32 houses. T.C., Town Hall. Dep. £2 2s.

JANUARY 31.

***Chingford T.C.**—44 flats at Copse, Forest Side. B.E. & S., Town Hall. Dep. £5 5s.

Neath T.C.—42 houses in 2 groups at Western-moor estate. B.E., Gwyn Hall, Neath. Dep. £3 3s. each group.

***States of Guernsey.**—16 houses at Route du Picquerel, Vale. G. Heggs, States Engineer, States Office. Dep. £1.

FEBRUARY 2.

Llwchwr U.D.C.—30 houses at 3 sites. T. Bryn Richard, architect, Gorseinon. Dep. £5 5s.

FEBRUARY 7.

***Teignmouth U.D.C.**—22 houses at Coombe Valley estate. W. M. Scott, S., Bitton Park. Dep. £3 3s.

FEBRUARY 12.

Pickering R.D.C.—Eight houses at Wrelton. H. Smith, architect, Burgate-chbrs. Dep. £2 2s.

***Southport C.B.** — Steel-framed brick-clad building at Eastbank-st. B.E. Dep. £2 2s.

FEBRUARY 19.

***Harrow U.D.C.**—76 flats at Whittington-way. E. & S., Council Offices, Harrow Weald Lodge. Dep. £2 2s.

NO DATE.

Devizes T.C.—24 houses at Brickley-la. estate (scheme 3C). B.S., Town Hall. Dep. £3 3s.

PAINTING, ELECTRIC LIGHTING, MATERIALS, ETC.

JANUARY 15.

***Halifax C.B.**—External and internal painting of 54 houses at Cousin-la. B.E., Crossley-st. Dep. £1 1s.

JANUARY 17.

Ilkeston T.C.—B.E. & S. (Materials).
Wanstead and Woodford B.C.—B.E. & S. (Materials).

JANUARY 19.

Oxon C.C.—County S. (Materials).

JANUARY 22.

Cheltenham T.C.—B. & Water E. (Materials).
Farnborough U.D.C.—E. & S. (Materials).
Flintshire C.C.—County S. (Materials).
Lichfield T.C.—City E. & S. (Materials).
Maidenhead T.C.—B.E. & S. (Materials).
Middx. C.C.—County E. & S. (Materials).
Southport C.B.—B.E. (Materials).

JANUARY 24.

West Suffolk C.C.—County S. (Materials).

JANUARY 25.

Battersea B.C.—T.C. (Materials).
Kensington B.C.—T.C. (Materials).

JANUARY 26.

Hackney B.C.—B.E. & S. (Materials).
Lambeth B.C.—B.E. (Materials).
Wood Green B.C.—B.E. & S. (Materials).

JANUARY 29.

East Grinstead U.D.C.—S (Materials).
Leics C.C.—County E. & S. (Materials).
St. Pancras B.C.—T.C. (Materials).

JANUARY 31.

Beckenham T.C.—B.E. (Materials).
***Ealing T.C.**—B.E. & S. (Materials).
Grantham T.C.—B.E. & S. (Materials)
Hunts C.C.—County S. (Materials).

FEBRUARY 2.

***Hayes and Harlington U.D.C.** — C. (Materials).

FEBRUARY 4.

Bournemouth C.B.—B.E. (Materials).

FEBRUARY 5.

Swansea C.B.—B.E. & S. (Materials).

FEBRUARY 7

Rhondda U.D.C.—E. & S. (Materials).

FEBRUARY 11.

Bromley T.C.—B.E. (Materials).

FEBRUARY 12.

Horbury U.D.C.—E. & S. (Materials).
Twickenham B.C.—B.E. & S. (Materials).

ROADS, SEWERAGE AND WATER WORKS

JANUARY 12.

†**Smallburgh R.D.C.**—Laying of water supply to Catfield housing site. Herbert Bateman & Partners, Halifax House, Bank Plain, Norwich. Dep. £3 3s.

JANUARY 17.

***Blackwell R.D.C.**—Roads and sewers at The Maltings site, Langwith. Architect and Housing Supt., "Dale-cl.," 100, Chesterfield-rd., South, Mansfield.

Coseley U.D.C.—Site levelling at Batman's Hill. C. Dep. £2 2s.

Tipton T.C.—Site preparation of Roberts Field housing scheme. B.E. & S. Dep. £2 2s.

Uxbridge U.D.C.—Sub-soil and surface water drains at Kingston-la., Hillingdon. E. & S. Dep. £2 2s.

JANUARY 18.

Doncaster C.B.—Roads and sewers, etc., at Intake estate (site No. 7F). Estates S., 15, South Parade. Dep. £3 3s.

JANUARY 21.

New Hunstanton U.D.C.—Roads and sewers at Hill-st. H. Marsh (L.), 14, King-st., King's Lynn. Dep. £2 2s.

JANUARY 24.

Salford T.C.—Preparation of site for Ladywell Flats. City E. Dep. £2 2s.

JANUARY 25.

Exeter T.C.—First stage of central areas reconstruction. City E. & S Dep. £5 5s.

JANUARY 26.

Hazel Grove and Bramhall U.D.C.—Sewer extension at High-la. G. B. Kershaw and Kaufman, 1, Victoria-st., Westminster, S.W.1. Dep. £3 3s.

JANUARY 29.

Bridgwater T.C.—805 yds. of 8 in. dia. spun-iron pumping main, etc. John Taylor & Sons, Artillery House, Artillery-row, S.W.1. Dep. £5 (cheque only).

Stafford T.C.—Roads and sewers at Rickercote Village estate. B.E. & S Dep. £5 5s.

JANUARY 31.

***Cuckfield R.D.C.**—Roads and sewers at Sayers Common site. E. & S., Council Offices, Haywards Heath. Dep. £2 2s.

Garstang R.D.C.—Sewage disposal works and pumping station, etc. Ward, Gardner and Ashcroft, 38, The Temple, Dale-st., Liverpool 2. Dep. £5 5s.

FEBRUARY 17.

Cambridge T.C.—690 lin. yds. of 9 in. dia. spun-iron rising main at Ditton Walk. B.E. & S. Dep. £2 2s.

GENERAL BUILDING WORK

(LONDON)

Harrow. — Houses. — U.D.C. seeking M.H. approval of erection of 7 houses at Woodlands housing estate at £9,609.

Holborn.—Flats.—B.C. propose to acquire site bounded by Guilford-st., Lamb's Conduit-st., Great Ormond-st. and Doughty-mews for erection of 257 flats subject to L.C.C. consent. S. H. E. Cooke (A.), Boro' A.

Hornchurch.—Shops and Flats.—B.C. to erect 15 shops with flats at Hacton Farm estate.

Hornchurch. — Dwellings. — B.C. propose 2 blocks of maisonettes, 6 bungalows and 2 houses at Maylands Green estate.

Hornchurch.—Houses.—M.H. approved erection of 10 houses at Elm Park estate by B.C.

Hornchurch.—Houses.—M.H. approved erection of 12 houses at Elm Park estate by B.C.

Hornchurch.—Houses.—M.H. approved erection of 34 houses at Elm Park estate for B.C.

Hornchurch.—Houses.—M.H. has allocated 230 houses for first half of the year.

Kensington.—Flats.—B.C. approved plans for 12 flats at Cathcart-rd. Gordon Jeeves (F.), 6, Catherine-pl., S.W.1.

Kensington.—Swimming Bath.—B.C. are in favour of L.C.C.'s request that they should build public swimming bath south of Holland Park-ave.

Kingston.—County Hall.—Surrey C.C. to spend £40,000 on immediate reinstatement of Ashcombe Block at county hall. C.A.

St. Marylebone.—Dwellings.—Council's A. prepared plans for development of Townshend Cottages site. First section fronting Allitsen-rd. will provide 70 flats. Provision made for rebuilding 2 public houses on site. Part of site reserved for nursery school.

Stoke Newington.—Baths Extension.—B.C. to purchase site for extension of Clissold-rd. baths at £3,720.

(PROVINCIAL)

Adwick-le-Street.—U.D.C. seeking approval of the M.H. for 178 houses for 1949.

Alcester.—M.H. has allocated 30 houses for the year.

Ashton-under-Lyne.—Cttee. of Ashton, Stalybridge and District Deaf and Dumb Society propose headquarters at Mossley-rd.

Blackburn.—E.C. propose new coll. of technology.

Blackpool.—T.C. approved: Two private hotels, Clifton-dr. and Wimborne-pl., for P. D. Emery & Son, South Shore; 24 houses and four shops, Red Bank-av. and Davenport-av., for R. Fielding & Son, builders, Stanhope-rd. Works.

Bedworth.—M.H. has allocated 125 houses for this year.

Bishop's Stortford.—Total allocation for U.D.C. for first half of year is 70 houses.

Bolton.—Rev. J. A. Weston, P.P., Church of St. Osmund's, Long-la., Breightmet, propose prim. schs. at Breightmet, at £56,000. H. Greenhalgh (L.), 15, Mawdesley-st.

Bray.—Cookham R.D.C. to acquire site for 34 houses.

Brighouse.—M.H. has allocated 30 houses for the year.

Bromsgrove.—R.D.C. approved: Additions, farm buildings, New House Farm, Romsley, for J. M. Tate & Sons, Ltd.; bungalows, Station-rd., Wythall, for Allard & Spence, Redditch-rd., Stoke Heath; hotel, Cofton Common estate, Cofton Hackett, for Ansell's Brewery Co., Ltd., Aston Brewery, Birmingham 6; farm buildings, Upper Gannow Farm, Romsley, for H. Hodgetts. R.D.C. applying to M.H. for sanction to borrow £58,154 for 44 houses at Catshill and Aston Fields, and £23,805 for houses at Charford for housing assn. R.D.C. propose maisonettes for aged people. Worcestershire E.C. propose district coll., sec., gram. and tech. schls. and prim. sch. at Burcot-la.

Burnley.—T.C. propose nurs. sch. off Barden-la., opposite Disraeli-st.

Burton-on-Trent.—Hodgson & Hodgson, Ltd., Wesley-gr., Carrington, Nottingham, propose engineering works.

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Chesterfield.—T.C. received approval for 300 houses for 1949.

Chester-le-Street.—U.D.C. to build 120 houses. S. to prepare plans for 86 houses at South Pelaw.

Coventry.—Modern Machine Tools, Ltd., Maudsley-rd., propose extensions to works at £20,000. T.C. propose central health centre at junction of Pool Meadow and Cox-st. and two health centres at Foleshill-rd., Bell Green and Four Pounds-av., off Allesley Old-rd.

Darlington.—Fodens, Ltd., 319, North-rd., to rebuild premises. J. J. Hunt, Ltd., to reconstruct Central Borough Hotel, Hopetown-la. J. Swenden & Co., Ltd., propose alterations to licensed premises at Skinnergate. Darlington Rise Carr Welfare Housing Society are to erect 12 houses. Additions proposed by E.C. to St. John's sch.

Denton.—Lancs. E.C. propose county sch. at Haughton Green.

Durham.—City C. to build shops at estate at Sunderland-rd. Plans by J. Green, B.E., Town Hall.

Durham.—Council of Durham Colls. to erect radiology dept. at science colls. Allen, Westoe Breweries, Ltd., planning erection of licensed premises at Sunderland-rd. estate.

Eastbourne.—12 houses for disabled ex-Servicemen to be erected at Victoria-dr., Willington.

Gosforth.—U.D.C. propose theatre as war memorial, at £5,000. S., Clifford Wyld, Council Offices.

Halesowen.—Worcs. E.C. propose adapting buildings for county coll.

Hanley.—M.H. has allocated 800 houses for the year.

Hasland.—Village hall cttee. propose village hall.

Heanor.—M.H. has allocated 100 houses for the year (20 private enterprise).

Hebburn-on-Tyne.—U.D.C. to build 200 houses. Architects, T. A. Page, Son & Hill, 75, King-st., South Shields.

Hoole.—U.D.C. propose 110 houses and 20 flats in 1949.

Houghton-le-Spring.—U.D.C. allocated 220 houses for 1949.

Hull.—T. Whittick & Son, Ltd., yeast merchants, Cogan-st., propose offices and works at Waverley-st.

Kettering.—M.H. has allocated 120 houses for the year.

Kidderminster.—Worcs. E.C. propose county coll.

Lancaster.—E.C. propose: Sec. sch. at Barton-rd.; coll. for adult education on site between Lancaster and Morecambe.

Leigh.—M.O.W. to erect 50 prefab. houses at Culcheth for persons engaged on atomic research.

Letchworth.—M.H. have allocated 55 houses for first six months of the year.

Lichfield.—T.C. approved flats, Beacon-pl., for Staffs T.A. and A.F. Assn., Drill Hall, Booth-st., Stoke-on-Trent. T.C. propose central bus station at site between Greenhill and St. John's-st.

Liskeard.—M.H. has allocated 55 houses for the year.

Liverpool.—M.H. sanctioned following loans to T.C.: £20,164 for erection of four houses, 12 flats and 10 garages at Speke-estate; £44,000 for erection of 40 flats at Springwood estate; £839,000 for erection of 676 houses at Speke estate; £37,000 for erection of 24 flats at Gerard-st. extension.

Liverpool.—M.O.W. issued licence for reconstruction of centre block of Exchange Buildings, at £400,000.

Liverpool.—T.C. approved: Extensions at Breck Park Sports Stadium, Townsend-rd., Anfield, for Liverpool Greyhound Racing Co., Ltd.; extensions at factory, Rice-la., for Walton, Dunlop Rubber Co., Ltd., Fort Dunlop, Birmingham; 108 houses, Stockbridge-la. and Knowsley-rd., for housing cttee. Lancs. E.C. propose dining-room and kitchen at Park View sec. sch., Huyton-with-Roby.

Liverpool.—T.C. to purchase following for temp. housing, subject to M.H. approval: 25-39, Rosalind-st.; 2, 2a and 2b, Morley-st.; 131-141, Kirkdale-rd. and 2, 2a, 4, 6 and 8a, Foley-st.; 2-4, Back Castle-st.

Manchester.—T.C. approved factory, Nutsford-vale, Longsight, for J. A. Turner & Son, Ltd. H. S. Fairhurst & Son (F.), Chancery-chbrs., 55, Brown-st.; chapel, Brownlow-rd., Northern Etchells, for trustees to Unitarian Free Church; factory, Ten Acres-la., Robert-st. and Stanley-st., Newton Heath, for W. H. Robinson & Co., 79, Mosley-st.; Walker & Homfrays, Ltd., Woodside Brewery, Eccles New-rd., Salford 5, propose hotel at Newell Green, Wythenshawe.

Morecambe and Heysham.—T.C. approved plans for development of Heysham Hall estate, for H. E. Shackleton, Heysham Hall.

Morley.—T.C. approved restaurant and café, Whitehall-rd., Drighlington, for S. Briggs.

Newcastle.—Factory for disabled men to be built at Hartlepool. Architect, G. S. Errington, 46, Grainger-st.

Newcastle.—Marshall & Tweedy, Grainger House, Blackett-st., are architects for layout of housing estate at Newton Park.

Newcastle-on-Tyne.—City A., 18, Cloth Market,

prepared plans for cardio-vascular centre at General Hospital, Westgate-rd., for City C. C.W.S. Architects' Dept., 90, Westmorland-rd., prepared plans for motor workshops at Lovaine-cres. Plans approved for additions to Rutherford Coll. of Technology, Northumberland-rd., for E.C. Plans by City A., Education Dept., 31, Northumberland-rd.

North Riding.—E.C. approved programme of repairs to 150 voluntary schs., at £100,000. C.A., County Hall, Northallerton.

Norton-Radstock.—U.D.C. to erect houses at Northfield site, Writhlington, subject to consent of M.H.

Nuneaton.—M.H. has allocated further 200 houses for the year.

Oldbury.—Worcs. E.C. propose county coll.

Orrell.—U.D.C. propose 50 houses at Moor-rd. site.

Portmadoc.—U.D.C. propose 128 houses at Maes Eifion estate.

Preston.—Lancs. E.C. propose training sch., transport office and central stores for school meals at Guildhall-st. and Cannon-st.

Rishton.—T.C. seek approval of M.H. for 40 houses at Sands estate, at £50,000.

Rochdale.—E.C. propose classroom block and adaptations to out-buildings at High Birch for conversion to special residential sch., at £30,000.

Rugby.—M.H. has allocated 10 further houses for the year.

Rugby.—T.C. approved eight s.d. houses, Newbold Grange-rd. Heel Bros., Ltd., builders, 108, Lawford-rd.

Salford.—Groves & Whitnall, Ltd., Regent-rd. Brewery, propose works canteen and restaurant at brewery. The Winterbottom Bookcloth Co., Ltd., 12, Newton-st., Manchester 1, propose reinstatement of warehouse and dye house at Blackburn-pl. E.C. propose two-unit nurs. sch. at Eccles New-rd., Ladywell.

Sedgefield.—R.D.C. received allocation of 75 houses.

Sheffield.—E.C. propose 10 colls. for adult education, at £3,533,800.

Staveley.—Derbys. C.C. propose adapting premises at 39, High-st., for youth centre.

Stockport.—T.C. approved: Extensions to motor repair works, Town Hall-sq., for Hollingdrake Automobile Co., Ltd. H. S. Fairhurst & Son (F.), Chancery-chbrs., 55, Brown-st., Manchester 2; extensions to assembly hall, Short-st., Heaton Norris, for Salvation Army. Estate Office, 103, Queen Victoria-st., E.C.4. E.C. propose first part of Vale-rd. sec. sch., Reddish.

Stockton-on-Tees.—T.C. proposes additions to gasworks. E.C.'s 1949 programme includes engineering block at Stockton Tech. Coll.

Stokesley.—R.D.C. to build 60 houses at Linden-av., Great Ayton.

Stretford.—British Oxygen Co., Ltd., Grosvenor House, Park-la., W.1, propose extensions to works, Westinghouse-rd., Trafford Park.

Sunderland.—E.C. planning erection of composite sch. at Seaburn.

Sunderland.—T.C. received allocation of 1,000 houses for 1949. Architect, J. E. Lewis, B.E.

Thornaby-on-Tees.—T.C. to build 80 houses during 1949. P. Brown, B.E.

Truro.—R.D.C. to erect houses as follows: Zelah, six; St. Mawes, four; Kea Playing-pl., six; Shortlaneseud, six; Ladock, eight; Perranarworthal, 10; Perranporth, six; Portloe, six; Forthscatho, six; Gwennap, six; Mitchell, six.

Tynemouth.—New fire station will cost £58,000 and B.E., 19, Howard-st., North Shields, is to prepare scheme. Scheme to prevent coast erosion at Cullercoats to be prepared at £17,800. T.C.'s programme for Marden neighbourhood unit includes 540 houses.

Wakefield.—T.C. approved four houses, Field-la., for W. H. Nicholson & Sons, Ltd., Mafeking Works, Duke of York-st. Wm. H. Ogden, architect, 33, Peterson-rd.

Walsall.—S. Price & Son, buckle makers, 3, Tantara-st., propose factory at Rollington-st.

West Riding.—C.C. propose main wireless station for police services at Morton Moor, nr. Bingley, and two booster sub-stations at Wholestone Moor, Golcar, and at Bradfield, nr. Sheffield. C.C. propose adapting Bretton Hall, Wooley Hall, Wentworth Woodhouse and Grantley Hall, for county colls., at £152,288. H. Bennett (F.), C.A., Wakefield.

Whitley Bay.—U.D.C. to build 100 houses. Plans by S., E. Roberts, Council Offices.

Wisbech.—T.C. agreed to reservation of site at Edinburgh-dr. for public-house.

TENDERS

* Denotes *accepted.*
† Denotes *provisionally accepted.*
‡ Denotes *recommended for acceptance.*
§ Denotes *accepted subject to modification.*
¶ Denotes *accepted by H.M. Government departments.*

Aylesbury.—Houses for R.D.C. Six at Stone: °C. & W. Montague, Ashton Clinton, £8,371; six at Weston Turville: °F. Harrowell, Tring, £7,013 (subject to M.H. approval).

Blackburn.—Day nursery at Stancliffe-st., for T.C. W. Pickstone, M.Inst.C.E., B.E.: °J. Whittaker & Sons (Blackburn), Ltd., Bastwell, Blackburn.

Burnley.—Works for T.C. A. G. Richardson, A.M.Inst.C.E., B.E. 50 "Orlit" houses at Lane Head site: °Middleton & Co. (Blackpool), Ltd., Banks-st. Sidings, Blackpool; alterations to Exchange Hotel for conversion into municipal offices: °Direct Labour, £8,242.

Corby (Northants).—250 "Wates" houses, for U.D.C. Blackwell & Storry (A.), architects, Gold-st.-chbrs., Kettering: °George Calverley & Sons (Contractors), Ltd., Leicester, £318,678.

Coulsdon and Purley.—Six houses at Hazelwood-rd. and Leighton-gdns., Sanderstead, for U.D.C.: °W. J. Frewing, Ltd., £8,376 (subject to M.H. approval).

Coventry.—Basements works for Block "B" in Precinct, for City Council: °G. Wimpey & Co., Middx (over £20,000).

Coventry.—Factory, works canteen and offices, at Torrington-av., for R. Jack (Hosiery), Ltd. A. H. Gardner (A.), 11, Eaton-rd.: °Higgs & Hill, Ltd., Roslyn-chbrs., Warwick-rd., Coventry.

Croydon.—Kitchen and dining-hall at All Saints' School, Upper Norwood, for C.B. Chief Ed. Officer, Katharine-st.: °E. H. Smith (Croydon), Ltd., 48, Wellesley-rd., Croydon, £2,462.

Croydon.—(a) Kitchen and dining-room, Kensington-av. school; (b) kitchen and dining-room, Monks Orchard school, for C.B. Chief Ed. Officer, Katharine-st.: °E. H. Smith (Croydon), Ltd., 48, Wellesley-rd., Croydon, £4,425 and £3,518.

Cumberland.—For adaptations, etc., at Ministry of Labour offices, Longtown: °Irwin & Sons, Ltd., 178, Warwick-rd., Carlisle.

Droitwich.—14 houses at Fernhill Heath site, for R.D.C. R. F. Fry, S., Rural Council House: °R. W. Morris, Foley-rd. Housing Estate, Worcester, £17,458.

Dudley.—Four houses at Mayfield-av., for T.C. F. H. Gibbons, M.I.Mun.E., B.S.: °R. E. Sykes, Cradley Heath, nr. Dudley.

Durham.—Additional classrooms at County School, Edmondsley: °Wright & Kellett, Ltd., 14, Ashley-ter., Chester-le-Street, Durham.

Guildford.—Seven blocks of flats for R.D.C: 3 at Charity Land, Ripley: °B. Butcher, Shalford, £11,693; 2 at The Street, West Clandon: °G. H. Wright, Ltd., London, £8,023; 2 at Perry Hill, Worplesdon: °E. Clarke & Sons, Ltd., Addlestone, £8,133 (subject to M.H. approval).

Hazel Grove and Bramhall.—Eight bungalows and 12 maisonettes at Hazel-gr. site (third section), for U.D.C. Frank Bradley (A.), District Bank-chbrs., 5, Wood-st., Bolton: °W. H. Matthews & Sons, Ltd., 25, Norris-rd., Sale, Ches.

Kendal.—Alterations and additions at Employment Exchange: °J. W. Howie & Sons, Bridge-st., Kendal, Westmorland.

Kirkby-in-Ashfield.—Alterations and reconstruction of Market Hall, East Kirkby. E.S. & Architect, Public Offices: °G. Shipman & Son, Ltd., Riddings, £5,594.

Larne.—Houses for R.D.C. 17 at various sites: °A. Duffin, Larne, £25,844; eight at Ballycarry: °E. Bosomworth, £11,420; 12 at Ballynure: °S. Ross, Belfast, £16, 518; (subject to Ministry approval).

Leominster.—12 "Airey" houses at Ivington, for T.C.: °McNee & Partners, £16,760.

Liverpool.—Works for City Council. 20 houses with garages at Allerton-rd., and Heath-rd., Springwood estate: °Unit Construction Co., Ltd., 113, Bentham-dr., Liverpool 16, £40,000; 20 flats at Cantril Farm estate: °Unit Construction Co., Ltd., £17,927; 28 houses and 32 flats at Lyme-gr. estate, Whiston: °J. L. Rawsthorne & Co., Belvidere Sawmills, Wallasey, Ches, £68,063 (all subject to M.H. approval).

Liverpool.—Works for T.C. Dr. Ronald Bradbury (F.), City A., Blackburn-chbrs., Dale-st., Kingsway. Canteen, Wholesale and Vegetable Market, Cazeneau-st.: °H. Brookfield & Sons, Ltd., 23, Mayfield-rd.; extensions to Oulton Workshop building, City Technical College: °Henry Boot & Son, Ltd., Church-st., Litherland; steelwork: °Redpath, Brown & Co., Ltd., Trafford Park, Manchester (rest of Liverpool).

L.C.C.—Contracts exceeding £2,500 in value placed by L.C.C. during period ending December 30. Repair of war damage, etc., at Morning-la. school, Hackney, C. P. Roberts & Co., Ltd., W.C.1. Repairs after war damage, etc., at Wilton Way school, Hackney, F. Troy & Co., Ltd., S.E.1.

¶London (Air Ministry).—Contracts to value of £500 or over for week ended December 25:—Erection of hutting, McKeand Smith & Co. Ltd., Wolverhampton; Wilson Lovatt & Sons, Ltd., Wolverhampton. Painting work, Thomas Cotton, Ltd., Mansfield, Notts; Geo. Jones & Son (Contractors), Ltd., Liverpool; G. H. Miller & Co., Ltd., London, E.7. General maintenance work, J. E. Billings & Co., Ltd., Oxford; Galbraith Bros., Ltd., London, W.C.1.

¶London (Air Ministry).—Contracts to value of £500 or over for week ended January 1. *Conversion of huts:* John McLean (Builders), Ltd., Coven, nr. Wolverhampton, Staffs. *Erection of timber towers:* J. Gerrard & Sons, Ltd., Swinton, Manchester. *Painting work:* Hiles & Son, Ltd., Hereford. *General maintenance work:* C. R. Gray, Keyford, Frome, Som.

¶London (M.O.W.).—Contract placed by M.O.W. during week ended December 18:—*London:* Cavendish-rd. School, Balham, S.W.12, Kitchen and dining-room, Flowitt & Co., Ltd., 168, Merton High-rd., Sth. Wimbledon, S.W.19; Trinity School, Bounds Green-rd., N.22, Kitchen and dining-room, Leyland Construction Co., Ltd.; 33-35, Southover, Woodside Park, N.12; Government Buildings, Kidbrooke, New lavatory accom., Grant & Partners, Ltd., 1, Manor Park-parade, Lee High-rd., S.E. *Caern:* Modern Secondary School, Bangor, Temp. school buildings, Watkin Jones & Son, Ltd., 16, Mount-st., Bangor. *Ches:* Upton & Government Houses, Chester, Houses, T. Warrington & Sons, Ltd., 82, Station-rd., Ellesmere Port, Cheshire. *Cumberland:* St. Paul's School, Frizington, Dining-room and kitchen, John T. Twiname, Ltd., Hill Crest, Brigham, Cockermouth. *Dorsetshire:* Haydon Park Polish Dependts. Hostel, Sherborne, Dorset, Alterations and adaptations, A. J. Stainer, The Firs, Bristol-rd., Sherborne, Dorset. *East Lothian:* Tranent J.S. School, East Lothian, Dining-room and scullery, J. Best (Edinburgh), Ltd., The Office, Warriston House, Edinburgh. *Glam:* Crawshaw-st. School, Ynysybwl, Kitchen and dining-room, F. T. Howells, Ltd., 83, Bartlet-st., Caerphilly, Glam. *Lancs:* Tonge Old-rd., Breightment, Bolton, Central kitchen, Drapers, Ltd., Tonge Fold, Bury-rd., Bolton. *Middx:* Hillingdon County Primary School, High-rd., Uxbridge, Kitchen and dining-room, Stanley Hugh Leach, Ltd., Lawrence House, 128, St. Margaret's-rd., Twickenham, Middx. *Notts:* Yorke-st. School, Mansfield Woodhouse, Notts. Temp. school buildings, Greenwoods (Mansfield), Ltd., Wood-st., Mansfield, Notts. *Staffs:* Regalia Club Premises, Windmill-la., Smethwick, Alterations and adaptations, J. Taylor & Sons (Builders), Ltd., Cemetery-rd., Lye, nr. Stourbridge. *Warwickshire:* Handsworth New-rd., Birmingham, Women's hostel, M. A. Roswell (Contractors), Ltd., School-st., Wolverhampton. *Worcs:* Broomsgrove, Worcester, Telephone Repeater Station, John Bowen & Sons, Ltd., George-st., Balsall Heath, Birmingham; Government Buildings, Whittington-rd., Redhill, Worcester, Int. & Ext. painting, Geo. Harrison & Sons (Builders), Ltd., 130, Worcester-rd., Droitwich. *Yorks:* Harrogate, Airey houses, F. Shepherd & Son, Ltd., Blue Bridge-la., York; Lindsay-rd. County School, Sheffield, Kitchen and dining-room, R. S. Huchison, Ltd., 430, London-rd., Sheffield.

¶London (War Dept.).—Works contracts placed by War Dept. for week ended December 25:—*Lancs:* Painting work, Geo. Jones & Son (Contractors), Ltd., Liverpool; building work, Walter Peak, Warrington. *Derbys:* Miscellaneous work, O'Dair Bros., Ltd., Tean, Stoke-on-Trent. *Kent:* Building work, H. Goodsell,

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Maidstone. *Wilts*: Painting work, F. & D. Lucas, Salisbury. *Herefordshire*: Miscellaneous work, H. Vaughan, Hereford. *London, S.W.1*:

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Building work, W. Norman & Son, Ltd., Bexleyheath, Kent. *Co. Antrim*: Miscellaneous work, John Sinton, Ltd., Tandragee, Co. Armagh.

Manchester.—Works for City Council: 50 "No Fines" houses at Woodhouse Park and Moss Nook: *W. Hodgkinson, Whaley Bridge (negotiated price).

Middlesbrough.—School in aluminium units at Denmark-st., for E.C. Delivery and erection of aluminium units: *Bristol Aeroplane Co. (Housing), Ltd., £17,550. Site works: *C. J. Boyd, Ltd., Middlesbrough, £12,237.

Middlesbrough.—50 houses at Thorntree estate, for T.C.: *J. Gilmore & Son, Middlesbrough (approved by M.H.).

Newark.—26 houses and 12 flats at Winthorpe-rd., for T.C. J. H. Clarke, A.M.Inst.C.E., B.S., Town Hall: *Ernest Coleman, Ltd., 20, Diamond-av., East Kirkby, Nottingham, £43,597.

Newcastle.—New mechanical engineering block at King's College. Architects, Edwards & Mamby, 52, Eldon-pl., Newcastle: *Nox, Ltd., 55, New Bond-st., London.

Newcastle-on-Tyne.—Four houses at Bourne-av.: *Palmer & Wilson, Fowberry-cres., Newcastle-on-Tyne.

Newcastle-on-Tyne.—Four houses at The Crescent, Benton. Architects: Stephenson & Gillis, Saville-chbrs., Newcastle: *J. J. Hedley, Oxford-st., Newcastle-on-Tyne.

Padiham.—Nursery school at Dryden-st., Padiham, nr. Burnley, for Lancs E.C. G. Noel Hill (F.), County A., County Offices, Fishergate-hill, Preston: *Wm. Livesey & Sons, Ltd., Nova Scotia Works, Blackburn, £15,465.

†*Potters Bar.**—20 houses at Blanche-la. site, South Mimms, for U.D.C. E. H. Walden, M.I.Mun.E., A.R.I.C.S., E. & S. Quantities by Higgins & Partners: *J. B. Connelly, Ltd., 6, Fitzroy-st., W.1. £27,512.

Rochdale.—Works for T.C. W. H. G. Mercer, B.Sc., A.M.Inst.C.E., B.S. Conversion of Fleece Hotel into municipal offices: *T. Partington & Sons (Builders), Ltd., Palm Mill, Chadderton, nr. Oldham.

Royton.—24 houses at Heyside housing estate, for U.D.C. L. Cookson, A.M.Inst.C.E., S., Town Hall: *J. E. France, 45, Assheton-rd., Moston, Manchester 10 (in lieu of tender previously accepted).

Scotswood-on-Tyne. — New workshops at Vickers Armstrongs, Ltd. Architects, R. James & Partners, St. Nicholas-bldgs., Newcastle: *W. Moss & Co., St. Mary's-pl., Newcastle.

South Billingham.—School canteen at County Modern School: *Thornton Construction Co., 30, Bridge-st., Stockton-on-Tees.

***Spalding.**—88 houses at various sites for R.D.C. F. B. Saunders, A.I.A.A., 10, The Crescent, Spalding, Lincs. *Drury & Co., Ltd., The Grange, Wigston Fields, Leicester. £120,269.

Sutton and Cheam.—18 flats at Hurstcourt-rd., North site, Sutton, for T.C. N. H. Michell, A.M.Inst.C.E., M.I.Mun.E., E. & S. Quantities by A. J. Willis & Thompson, FF/R.I.C.S.: *Myton, Ltd., 7, Warwick House-st., London, S.W.1.

Thornaby-on-Tees.—10 houses for T.C. P. Brown, B.E.: *Direct Labour.

Tynemouth.—Boat house and club premises at Priors Haven. Architect, J. R. Wallace. Northumberland-sq., North Shields: *B. Peel, Ltd., East Mill Works, North Shields.

Uppingham.—Four "Airey" houses at Ridlington, for R.D.C.: *A. E. Cox & Co., £5,942.

Wallasey.—50 houses for T.C. R. F. B. Grundy, B.Sc., A.M.Inst.C.E., B.E.: *H. G. B. Construction Co. (Liverpool), Ltd., Hoylake-rd. (10); *S. Burrows & Son, George Reeds-la. (10); *W. H. Farrell, 175, Borough-rd., Wallasey (8); *T. Rule, Harlian House, Cobham-rd. (6); *J. L. Rawstone & Co., Edwards-la., Liverpool 10 (6); *C. G. Davies, Reedsville-gr. (6); *J. L. Leech & Co., Ltd., 515, Leasowe-rd. (4). (Rest of Moreton, nr. Wallasey.)

Warrington.—40 houses at Dallam Farm estate, for T.C. J. Y. Hughes, M.Inst.C.E., B.S., Municipal-bldgs., Bank Park: *D. Cooper, 15, Clarence-st., Warrington, £45,863.

West Bromwich.—50 houses at Newtown housing estate, for T.C. H. Schofield, B.Sc., A.M.Inst.C.E., B.S., Town Hall: *S. J. Smith & Co. (Bidford), Ltd., 205, Corporation-st., Birmingham 4, £61,000.

West Riding.—Multilateral County School, Darley Hall, Worsborough Dale, nr. Barnsley, for C.C. Hubert Bennett (F.), County A., County Hall, Wakefield: *Wm. Dunk & Sons, Ltd., Peel-st., Barnsley (estimated cost, £130,000).

Wortley.—16 pairs of houses at Lane-end, Chapeltown, Job No. 748: six pairs of houses at Wharncliffe Side, Job No. 600, for R.D.C. Husband & Co., architects, 388, Glossop-rd., Sheffield 10. J. Gregory, B.Eng., M.I.Mun.E., E. & S. Quantities by Husband & Co. 16 pairs at Lane-end, Chapeltown: *Haddon Builders, Ltd., 40, Spring-st., Sheffield 3, £38,480; six pairs at Wharncliffe Side: *Ridgway & Sons, Ltd., 148, Green-la., Rawmarsh, Rotherham, £15,540.

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